PAPERS

IN

AGRICULTURE.

AGRICULTURE.

THE GOLD MEDAL, being the Premium offered for planting Larch, in the years 1794 and 1795, was this Seſſion adjudged to JOHN SNEYD, of Belmont, in Staffordſhire, Eſq. from whom the following Papers were received.

SIR,

HEREWITH I ſend you a Certificate of the Larches which I happened to have planted within the time mentioned in the advertiſement of the Society; they had been tranſplanted from the ſeed-bed, and afterwards from the nurſery, at proper intervals, and had all excellent roots; ſo that (excluſive of their preſent very flouriſhing appearance) I doubt not but they will do us all credit. Every one, I truſt, is yearly more

and more convinced how very profitable the cultivation of Larch muſt prove to the kingdom at large. The *method uſed in making* this plantation, was, planting with good roots, in large holes, well bedded in with ſoil of a light ſand and loam, in rough, heathy, and ſtony land, without any previous preparation of the land, as it wanted none. The ages of the trees are mentioned in the Certificate. It might have been better to have planted them out one year ſooner, had not great care been taken.

I am, dear Sir,

Your obedient and obliged
humble Servant,

J. SNEYD.

Belmont, Dec. 22, 1797.

Mr. MORE.

SIR,

THIS is to certify, that John Sneyd, Eſq. did plant, in incloſures well fenced with good ſtone walls, at Belmont, Staffordſhire, the following Larch-Trees, between June 1794, and June 1795, at proper diſtances, in a ſoil that ſuits their growth, and that they are now in a thriving and healthy condition.

6000, when planted out, were 4 years old,
5000, ditto 3 ditto.

WILLIAM CARLISLE,
Curate of Ipſtones.

Ipſtones, Dec. 21, 1797.

The Thanks of the Society were this Seſſion given to THOMAS DAVIS, Eſq. for the following Communication.

SIR,

HAVING had the honour of being elected a member of the Society for Encouragement of Arts, &c. and thinking it the duty of every member to communicate the reſult of any experiments he may have made, on thoſe ſubjects which are the particular objects of the Society, eſpecially ſuch experiments as require a long ſeries of years to aſcertain their effect, I flatter myſelf that the following account of Lord Bath's extenſive plantations at Longleat will not prove unacceptable, and in that hope I ſend them to you.

I am, SIR,
Your very obedient Servant,

THOMAS DAVIS,
Steward to the Marquis of Bath.

Longleat, Jan. 2, 1798.

Mr. MORE.

HAVING been for near thirty-five years in the ſervice of the Marquis of Bath, and, during the laſt twenty, having had the management of his extenſive woods and plantations, I have had full opportunity of obſerving the comparative profit of the different kinds of trees and underwood planted by his Lordſhip during that time; a period in which his Lordſhip has regularly planted on an average upwards of fifty thouſand trees a year, and in ſome years upwards of one hundred thouſand.

The land which his Lordſhip has planted, has been chiefly that tract of poor heathy land, at the foot of Wiltſhire Downs, near Warminſter, which divides the counties of Wilts and Somerſet.

The ſoil in general a black peat, of four or five inches thick, on a ſubſtratum of dry huſky white ſand, intermixed with ſmall ſtones of grit, but as firmly run together as if it had been in a ſtate of fuſion; the natural production, chiefly heath mixed with moſs, but in a weak ſtarve d ſtate.

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In ſome places the upper ſtratum varies to a tolerable ſandy loam, on a bed of yellow gravel, but thoſe parts are comparatively ſmall; in fact, ſuch land as to be almoſt incapable of improvement in any way but by planting.

The value of this land in its original ſtate, as part of a very extenſive common, was from one to four ſhillings per acre, per annum; and though his Lordſhip has in many inſtances expended double the value of the fee-ſimple of the land, in attempting by ploughing and liming ſome of the beſt parts of it, to bring it into cultivation, it has nevertheleſs ſo ſtrong a tendency to run back to its original ſtate of heath, that it ſets all agriculture at defiance.

Even lime, which is the only manure adapted to it, and which will enable it to produce crops of corn for three or four years after the firſt breaking up, loſes its effect in about ten years, and we have never found that a ſecond liming has produced any good effect.

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In fact, thoſe parts which have been improved to the higheſt pitch, were, in my opinion, of leſs value as paſture land, fifteen years afterwards, than when covered with heath. Hardy kinds of ſtock would browſe the heath; but the graſs it now produces (chiefly the "aira or hair graſs") is ſo hard and wiry, that ſcarcely any thing will eat it.

This whole tract of land, notwithſtanding its poverty and preſent naked appearance, was once covered with wood: tradition ſays ſo; and the remains of a number of charcoal pits over every part of it, confirm it. But ſince the memory of man, there has been ſcarcely the appearance of a buſh remaining; when the great trees were cut, the little ones being deprived of their ſhelter, caught cold and died.

Lord Bath very judiciouſly covered it with wood again; but being well aware of the difficulty, indeed almoſt impoſſibility, of raiſing foreſt-trees upon it, unleſs they were ſheltered by Scotch Firs, he very wiſely planted

planted a large proportion of the latter, and on all the pooreſt ſpots planted Scotch Firs alone.

I have the honour to ſubjoin an account of the profit he has derived from this plan; and have to add, that the *Beeches, Oaks,* &c. which were planted on the *beſt* ſpots, although nurſed up by Scotch Firs, will not be ſo valuable at *ſixty* years old, as the Scotch Firs on the *very worſt* land are at *thirty*.

I alſo take this opportunity to remove a doubt which has of late prevailed, too generally, that *Engliſh-grown Fir* timber is of *no uſe*. I have had more opportunities of uſing it, of all ages, from one hundred years growth downwards, than can fall to the lot of moſt men; and I can ſafely aſſert, from my own experience, that in all purpoſes to which Deal is applicable, I have found Engliſh-grown Fir equal in ſtrength and durability to any foreign Deal whatever. I allow that the Scotch Fir (although it is undoubtedly the real yellow Deal) is ſeldom of ſo delicate a grain as the foreign yellow Deal,

Deal; but this is entirely occaſioned by the rapidity of its growth, and its having too much room to throw out large ſide branches. Lord Bath's Scotch Firs, which are known to have been planted in 1696, are from two to three feet in diameter; whereas the beſt Chriſtiana Deal, although evidently one hundred years old, is ſeldom above a foot in diameter; and its knots, which denote the ſize of its ſide branches, are ſmall and inconſiderable, therefore evidently appearing to have grown ſlow and cloſe together. We have a cart-houſe on Lord Bath's eſtate, which was built above eighty years ago out of ſmall Firs, which is now perfectly ſound and upright; and, for the laſt twenty years, all the carpenters of the country have uſed ſmall Firs for rafters, &c. with ſucceſs, and no timber is more ready ſale. The old Firs of 1696 are worth from 18d. to 21d. per foot, and thoſe of thirty years old, if tolerably ſtrait, yield a ſhilling. Oak trees of thirty years old are not worth above 9d. per foot, and beech not above 6d. In fact,

neither

neither of them can be called timber, or properly uſed as ſuch, at thirty years old.

1ſt, It ought alſo to be remarked, that although Fir timber is worth individually more, per tree, than Oak or Beech of *the ſame ſize*, it will nevertheleſs grow faſter and thicker together than any other trees. *Four Firs* will grow where *one Oak* or *Beech* will grow; for Firs are the better, and deciduous trees the worſe, for being crowded.

2dly, That a great deal of poor heathy ſhallow land, which will produce Scotch Firs in the greateſt perfection (and a great deal of the land planted by Lord Bath is of that deſcription), will not grow Oak or Beech *at all*, nor in fact any thing but Scotch Fir. Even Larch has failed univerſally on all thoſe ſpots where the upper ſtratum is peat.

Having lately had occaſion to cut ſome rides through ſome extenſive Plantations of Scotch Firs which were planted juſt thirty years ago, I meaſured the land, and the trees which were cut off it, very exactly, and

and the following reſult ſhews that the profit of planting Scotch Firs has been full SEVEN PER CENT. COMPOUND INTEREST; whereas no plantation of deciduous trees, within my knowledge, has paid *five* per cent. *ſimple intereſt*. Indeed we uſually reckon, in valuing eſtates for ſale, that the common growth, even of Elm Timber, on its moſt favourite ſoils, is ſeldom equal to more than three or three and a half per cent. ſimple intereſt.

336 Scotch Firs, of 30 years old, cut upon a ſtatute acre, average meaſure 3 feet per tree, valued at only 10d. per foot, viz. 2s. 6d. per tree, amount to, *per* acre - -				£.	s.	d.
				42	0	0
At the time of planting, this land, then newly incloſed from a common, was not worth above 2s. per acre, per annum, which, at twenty-five years purchaſe for the fee-ſimple, amounts to	2	10	0			
And the coſt of the trees and planting was not above	3	0	0			
Total expence per acre, even ſuppoſing the land to be annihilated	£.5	10	0			

£.5

£.5 : 10*s.* principal will increaſe, in thirty years, as follows :

at 5 per cent *ſimple* intereſt, to only	£.13	15	0
at 5 per cent *compound* intereſt, to	23	15	5
at 7 per cent *compound* intereſt, to	41	17	4

So that the Scotch Firs, which have increaſed £.5 : 10*s.* principal to £.42 in thirty years, have paid upwards of 7 per cent. compound intereſt.

The SILVER MEDAL was this Seſſion voted to JOHN PHILLIPS, of Ely, Eſq. for the following Communications relative to the making Plantations of Oſiers, with regard both to the Seaſon for planting, and the Kinds adapted to each particular Soil.

SIR,

SINCE I had the honour of addreſſing the Society, I have made many experiments on different ſoils, with the view of aſcertaining which are moſt appropriate to Oſier Plantations; and which, of the almoſt infinite variety of Oſiers, are beſt adapted to the different ſoils; but as my Plantations are *chiefly* in the Fens, I have directed my attention more particularly to determine what ſpecies of Oſiers are moſt profitable in a Black Peat Soil, and which is the moſt advantageous way of planting them, and at what ſeaſon

of the year. It would have been of much public utility, if the baſket-makers had given a ſpecific deſcription of the beſt kind of Oſiers, the planting of which they wiſhed to be encouraged by premiums. The planters who intended becoming candidates for the rewards or honours of the Society, would in that caſe have procured thoſe only; much expence would have been ſaved to other gentlemen as well as myſelf, and a very conſiderable addition would have been made in our Plantations to the ſtock of the beſt Oſiers which are imported from abroad. As we have no generic or ſpecific terms, I will endeavour to give you a plain vulgar account of thoſe only which are ſelected by the moſt experienced planters in this neighbourhood. Oſier, in common parlance, is a word of very indeterminate ſignification: it is certainly a ſpecies of the Salix, but admitting of many varieties. I have endeavoured to reduce them to two Claſſes; firſt, thoſe which are ſo called by the growers and baſket-makers, diſtinguiſhable by their more blunt, mealy,

or

or downy leaf; and, ſecondly, thoſe that have a leaf more pointed, ſmooth, and green, reſembling that of a myrtle. Of the firſt claſs I have nine or ten varieties, all of which I ſhall eradicate, ſave one, viz. that which is called the Grey or Brindled Oſier. It has, in common with the others, the light-coloured leaf, but known by having its bark ſtreaked with red, or blood colour. It has not been long introduced into this country. It grows vigorouſly, is very hardy and tough, and bleaches well. All the others, of the firſt Claſs, delight in a wet ſoil, and will flouriſh even in the moſt barren kind of Peat; but they are coarſe and ſpongy, have a large pith, are brittle, and very periſhable: they are, however, uſed ſometimes for the ſtouter parts of large baſkets, and, unpeeled, for wine hampers. They grow quick and large, and a ſmall number will fill the ell bunch, by which all Oſiers are ſold; they are profitable to thoſe growers only who live near London, or whoſe plantations are contiguous to water-carriage. I have ſome acres of them; and were I to ſend

them there by waggon, which is our only mode of conveyance, they would not pay for the carriage. In time of war, when our intercourſe with France and Holland has been interrupted, where they grow better ſorts, they have been too much reſorted to, which has brought our baſkets into diſrepute, and leſſened the demand for them in foreign markets: this, together with the enhanced price of inſurance, accounts for the fact, that war makes Oſiers in this kingdom both dear and cheap; that is, dear at the commencement for want of importation, and cheap during its progreſs for want of exportation, after having been manufactured into baſkets, and other works to which they are applied. Of the ſecond Claſs are, 1. The Welch, both red and white; the red having the preference, and ſaid to have been brought originally from Wales; they form an almoſt eſſential part of every Plantation, as no other is fit to tie the bunches after the rods have been peeled and whitened. A bunch is formed by compreſſing the Oſiers in an iron hoop or band, of an ell in circumference;

ference; eighty bunches make a load, which four years back ſold at £.18; it is not now worth £.12. The beſt land will produce a load on an acre, but half a load is not a very bad crop on bad land. The expence of weeding, renewing, cutting, and peeling, is about £.5 per acre, when the buſineſs is well done; but they often go unweeded, when they are ſold at a low price, to the great decay of the Plantations. The Welch are alſo uſed to tie Reed Sheaves for thatch; they are ſo bitter, that cattle will not browſe them, unleſs driven to the extremity of hunger, and rats will not touch them, although they will deſtroy almoſt every kind of bandage. They were formerly grown for the coopers, to bind their hoops; but for this uſe they have long given way to the Hazel; they are very tough and durable, and would rank with the beſt ſorts for the uſe of baſket-makers, were they of a better colour when peeled.

2. The *Weſt Country* Spaniard. It is ſuppoſed to have been firſt introduced into the Weſt of England from Spain. It is very dif-

ferent from the *Spaniard*, which is a ſpecies of the larger Willow, and uſed for hedging-wood and hurdles. In the Iſle of Ely it was long in high eſtimation, until others were introduced, ſuppoſed to be ſuperior in ſome of their qualities: the bark is of a blueiſh grey colour; it grows ſtout and ſtately, and objects to no ſoil; the grower, however, urges againſt it what he thinks to be a ſtrong objection, viz. that it produces a ſmall crop. It bears, comparatively, only a few ſhoots on a head: this is certainly true; but what then? then it is not ſo profitable. I admit it, provided only an equal number be planted on an acre with thoſe that bear more ſhoots; but why ſhould the grower tie himſelf to plant an equal number of different ſorts on a given quantity of land? The nurſeryman is governed by no ſuch rule; and the farmer would become an object of pity, were he to ſow an equal quantity of every ſort of grain on an acre. The Society is bound to draw ſome line to prevent fraud, but the planter and farmer ſhould be guided only by the

burden

burden which the land is capable of bearing. My experience teaches, that an acre of land will carry, of this ſort, 14000 plants with more eaſe than 12000 of the beſt new kind.

3. I have not been able to learn where the *new kind* originated. It is well known every where; and although it muſt be much older in ſome counties than others, it is univerſally called by that name. There are, however, two ſorts; the other is called the *laſt* or *beſt new kind*. The bark of the former is of a light brown colour; that of the latter reſembles ruſty iron, with light longitudinal ſtripes: it is on that account called, by ſome perſons, the *Corderoy*. When the new kind was firſt introduced into the Iſle of Ely, it ſoon expelled moſt of thoſe of the firſt claſs: the few that are retained are uſed by the fiſhermen to make grigs, or twig tunnels, to catch eels and other fiſh: it ſtill maintains conſiderable reputation, but yields to the *laſt* new kind, which, beſides poſſeſſing moſt of the beſt properties, produces, on an average, at leaſt four ſhoots on the head more

than any other, and it will grow well in a dry mellow ſoil. As its ſhoots are more numerous, a greater ſpace ſhould be allotted to it, to draw nouriſhment from the earth, and to admit the rays of the ſun and circulation of air, ſo neceſſary to the growth of every plant: 11000 an acre is quite ſufficient on good land. But the beſt of all, conſidered in a public or political view, is

4. The FRENCH. Under this name the *Ground-Setter* is frequently ſold; and I am informed that it was ſo called, from its tendency, when neglected, to direct its ſhoots amongſt graſs and weeds parallel with and near the ground: it is of the ſame quality, colour, and appearance with the French, except that it has at the point a tuft formed of leaves curled inwards, which has the appearance of a ſmall withered roſe-bud. You will eaſily know both from all others, thus: draw them through your fiſt, from the top to the bottom, and the leaves will ſnap off with the brittleneſs of glaſs. The *Ground-Setter* grows very ſlowly, and is rejected by the

the planters on that account: the *French*, although more luxuriant, is alſo comparatively of ſlow growth; and it requires a great number to make up the bunch; but it is exceedingly taper, pliant, cloſe-grained, tough, and durable. The baſket-makers are more deſirous of it than any other, as it is beſt ſuited to make the ſmaller and finer baſkets, hats, fans, and other delicate articles. As it is much diſregarded by the planters in this kingdom, the baſket-makers, in times of peace, import vaſt quantities from France, the Auſtrian Netherlands (Belgium), and Holland, where it is cultivated with great ſucceſs. It is ſingular that it ſhould be imported cheaper than our planters can afford to grow it; the lands in France and Holland are much dearer than our fens. As an article of commerce, or as a raw material, it deſerves every encouragement that the public or individuals can give it; and if it be not ſo profitable to the grower, it is always of ready ſale.

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I have heard of another ſort, which is well ſpoken of, called the Red Kent Wlilow; but I am doubtful whether I am poſſeſſed of it or not: we have in this neighbourhood a very hard, tough Willow, of a reddiſh colour, of which hurdles, cribs, &c. are generally made. I planted it laſt year, in footſets, for the uſe of baſket-makers; but as the experiment is now only in proceſs, I can ſay nothing of its utility. I hope that thoſe who ſhall hereafter become candidates for the Premiums will give a deſcription of the ſorts planted by them; and of all others that are moſt eſteemed in their neighbourhood, perhaps ſome of your correſpondents, who may not be candidates, will favour the public with their knowledge on the ſubject.

As to the moſt advantageous way of planting, there is ſome difference of opinion. The different qualities and ſituations of ſoils are not always attended to; we are often deceived by a ſingle experiment; what may hit or fail one year, may be the reverſe the next; it requires a diverſified ſeries of experiments

riments to enable us to form a right judgment. My plantations of the year 1794, made on banks of ſoil thrown out of the ditches on each ſide, and thoſe made on the level ground, flouriſhed equally well that year. It was difficult to judge of them the next year, for they had been more or leſs injured by the vaſt inundation of all the fens of the Iſle of Ely, and which was not removed in many places until late in the ſummer; but in the third year the advantage was manifeſtly in favour of thoſe which had been made on banks or elevated beds.

We have in this diſtrict from ten to fourteen inches of vegetating ſoil on the ſurface; immediately beneath it is a black or brown barren peat, of a looſe texture. In the drought of ſummer, when the moiſture is exhaled from the upper and more tenacious ſoil, the water inſtantly filters through the peat, and leaves the plants deſtitute of their beſt nouriſhment; but when the peat is thrown upon the ſolid earth, it will prevent the rays of the ſun from penetrating to the bottom;

bottom; and when the water falls in the ditches, the lower and more tenacious ſoil will retain a ſufficient quantity of it for the uſe of the plants. Care ſhould be taken to inſert the ſets through the peat into this lower ſtratum: they will ſtrike their radicles the firſt year into this more ſolid earth; but when the peat has been meliorated by the ſun and air, and been compreſſed, and become more adheſive, they will ſtrike higher in the ſtem, until the radicles or fibres approach the ſurface. It muſt be admitted, that this is an expenſive method, and leſſens the quantity of land to be planted upon. To remedy this inconvenience, I lay out my land in beds or barrows, of eighteen feet wide; ditches, of nine feet wide, are dug on each ſide; the top of which, fourteen inches thick, is laid on the barrows; turf for fuel is then dug in the ditches, the expence of which is about 1s. 8d. a thouſand; they are ſold for 2s. 6d.

The beds or barrows, now conſiſting of about two feet and a half thick of ſolid earth, above the ſurface of the peat, are planted

planted the following autumn, and produce good crops: when the water is ſufficiently low, I caſt upon theſe beds a fetid vegetable ſubſtance, vulgarly called Bear's Muck; it reſembles wet ſhag tobacco, and lies under the peat; it is extremely uſeful to the plants; and although it is, in its primitive ſtate, a perfect *caput mortuum*, when expoſed ſometime to the air it putrifies, affords mucilage, and becomes a good manure. In embanked diſtricts, ſubject to frequent and long inundations, two other advantages are obtained from theſe raiſed beds: the Oſiers are thereby removed farther from the reach of the ice, which on a thaw floats into the lower plantations, and does them much injury. When the waters are high, in the cutting or planting ſeaſon, the beds are more acceſſible than the level ground; but having had the command of the water laſt ſummer, by a mill or engine, I dug out the peat into turf, having firſt laid aſide the upper ſpit; the turf being removed, I ſhall return this ſpit into the ditch, and plant upon it; thus no ground will be loſt.

In the year 1796 I made an experiment on an acre of land of this quality; I ploughed one half of it, and the other half was dug with the ſpade, about fourteen inches deep; the ſod of that thickneſs was inverted by the ſpade. The plantation on the ploughed land was very weak, and failed in many places; that which followed the ſpade did better; but they are both ſo bad, that they muſt be renewed this year. On the former, the beſt land lay uppermoſt, which, when deprived, by the heat, of its moiſture, derived no aſſiſtance to ſupport the plants from the peat that lay underneath; on the latter, ſome of the beſt land was laid in the ground, but not deep enough to retain a ſufficient quantity of moiſture. The preceding year I planted in a piece contiguous, on banks as before deſcribed; and there the Oſiers do well.

I have a rich loam lying on a bed of potters clay: the ſituation is low, and expoſed to the water; French Oſiers were very ſcarce, and I could procure only a few hundreds laſt year; determined to eke them out

as

as far as I could, I laid them down in their whole length, and pegged them on the ground; they ſtruck good roots into the earth, and threw out abundant ſhoots.

This experiment, together with that of planting upon banks, will enable us to anſwer the queſtion often aſked, "Of what length ought the ſet to be?" It depends entirely upon the nature and ſituation of the land. There ſhould be ſo much of it in the ground as to enable it to procure moiſture, and ſo much of it out of the ground as to make it acceſſible in the cutting ſeaſon, where much weeding is not required: and where there are no floods, or where they ſubſide quickly, there ought to be very little of it out of the ground. The nouriſhment, in that caſe, will paſs immediately from the roots to the rods or ſhoots, without the burden of firſt ſupplying the head or ſtock.

Every experiment that I have made confirms my opinion, that the autumn, and not the ſpring, is the moſt proper ſeaſon for planting. Thoſe who think with me ſay, that the

the fall of the leaf indicates the proper time to cut the ſets; it certainly is ſo in general; but the leaf of the Oſier, like that of the Oak and other trees, will ſometimes prolong its departure. The ſtagnation of the juices is the true criterion by which to judge, not on account of the ſet, but of the trunk, leſt, if you amputate it whilſt the juices are in circulation, it ſhould bleed to death. I have planted in the firſt week of October, and the ſets appeared to remain torpid for the remainder of the year; about Chriſtmas I took up ſeveral of them, and was much pleaſed to find that they had ſtruck root, although they had given no outward appearance of vegetation from the time of planting. It is probable that the earth retains a ſufficient portion of the ſummer heat until the autumn, to give life to plants at the root, when the atmoſphere may at that time be ſo cold as to diſcourage any exertions above-ground; and perhaps nature may be more vigorous when her operations are confined to one point.

When

When you plant in ſpring, the ſet ſeems (if I may ſpeak ſo figuratively) to have its attention diſtracted by two operations not very homogenous, the one upwards, the other downwards. It is impelled to ſhoot its radicles into the earth, to form its ſtability, and procure ſuſtenance; and it is called upon at the ſame time to put forth its leaves and branches. To ſpeak without a figure, the prolific ſun and air induce it to exhauſt the juices, in extending the ſhoots before the roots are ſufficiently ſtrong and large to ſupply the drainage; hence it is that, contrary to the commonly received opinion, a warm and dry ſpring is always injurious to the young plantations. If there be not ſufficient rain to convey ſuſtenance by the leaves and bark, in aid of the ſmall quantity procured by the root, the plant muſt die or dwindle; and it is very obſervable, that the firſt vigour of the late-planted ſet is a ſure prognoſticator of its decline or diſſolution. In the autumn of 1795 I made a ſmall plantation, and on the remainder of the

piece I planted in March following. In the beginning of May, thoſe laſt planted were the forwardeſt, which, for a time, ſtaggered my opinion of the moſt proper time for planting; but in June, thoſe planted in the autumn had much the advantage, and have continued to grow well: thoſe that were ſet in the ſpring, decayed in ſummer, and many of them died. When the fibres have been formed before the winter, or when a tendency to form them has been obſerved, by the ſwelling of the bark, and particularly at the eye, the plant is enabled to charge itſelf with a ſufficient portion of the juices to anſwer the demand of ſpring.

The rule, therefore, which I lay down for myſelf, where no obſtructions are raiſed by the water, is to plant as early in the autumn as I can cut the ſets, without endangering the parent ſtock.

I am, &c.

J. PHILLIPS.

Ely, Feb. 3, 1798.

Mr. MORE.

In the Seſſion of the year 1796 and 1797 (ſee Vol. XV. page 289) Mr. HARPER, of Bank-Hall, in Kirkdale, Lancaſhire, communicated to the Society the following Obſervations relative to the different modes of cultivating Wheat; but as the terms of the Society's Advertiſement were not fully complied with, the Quantity of Land cultivated in each mode not being ſo great as required, Mr. HARPER could not be conſidered as entitled to the Premium offered: yet, reflecting on the judicious Obſervations contained in the Paper, and the advantage it may be to the Public to have thoſe Obſervations laid before them, the Society voted to Mr. HARPER their SILVER MEDAL, and the Paper is now printed.

SIR,

I TAKE the liberty of addreſſing to the Society for the Encouragement of Arts, Manufactures, and Commerce, the

following ſtatement of the cultivation of a field on the Bank-Hall eſtate, in my poſſeſſion, containing (according to a late ſurvey) twelve acres two roods twelve perches (ſtatute meaſure), with an account of the management of a crop of Beans, and produce thereof, the preſent year 1796, and the preparations, by ploughing and harrowing, as well as the different methods made uſe of in ſowing the ſame with Wheat the preſent autumn.

The field had been a meadow for thirty years, and had been regularly manured, by which means the hay it produced began to grow coarſe, and not ſo nutritive as might be wiſhed; for which reaſon I ploughed it up, as ſoon as the after-graſs was eaten off, in the autumn of 1793; and, in the ſpring of the year 1794, ploughed it twice more, and ſowed it with barley, which produced ſeven quarters per acre. In the autumn of 1794 I ploughed it into one-bout ridges, to lie by the winter; and, in the ſpring of the year 1795, I ploughed it twice more, and

ſowed

ſowed it with barley again (yet ſtill without any manure), which produced ſix quarters per acre: the crop was much lodged, otherwiſe the produce would have been equal, if not ſuperior, to that of 1794. In the autumn of 1795 I ploughed it again into one-bout ridges, to lie by the winter; and in February 1796 I ploughed the ridges acroſs, and then manured it with about ten tons of dung to the acre, harrowed it in, and on the ſeventh day of March began drilling it, making the drills eighteen inches aſunder: by the twenty-third of the ſame month it was all ſown. Eight acres were of the early Blue Bloſſom, which were ſown by hand in the drills, and the drills were harrowed down to cover them, which left the land quite even: the other four acres and a half were Mazagan Beans, which were laid in the drills by hand; for, by being large, they do not ſow well either by the hand, or by a machine; they were harrowed, to cover them, the ſame as the others. The produce of the Blue Bloſſoms was five

quarters and a half per acre; the produce of the Mazagan, five quarters per acre. The quantity of ſeed ſown, per acre, of the Blue Bloſſom, was one buſhel and twenty-ſix quarts; the quantity of the Mazagan was two buſhels per acre.

Bank-Hall, Kirkdale, Oct. 27, 1796.

Expence of Drilling.

	£.	s.	d.
To drilling 12 acres 2 roods 12 perches, at 3s. per acre	1	17	9
To ſowing 8 acres of Blue-Bloſſom, at 9d. per acre	0	6	0
To laying in the drills, by hand, 4 acres 2 roods 12 perches of Mazagan, at 2s. per acre	0	9	2
To covering beans in drills, at 1s. 6d. per acre	0	18	10
To horſe-hoeing twice, at 2s. 6d. per acre	3	3	2
To hand weeding, at 1s. per acre	0	12	6
To reaping (by hand-cutting), at 7s. per acre	4	7	6
To 2 quarters 7 buſhels 20 quarts of Seed-Bean, at 2l. 5s. per quarter	6	12	10½
	£.18	7	9½

Comparative

Comparative Statement of (what would have been) the Expence of Broad-Caſt.

	£.	s.	d.
*To ploughing the land into butts, for the ſeed to be ſown, at 6s. per acre - -	3	15	0
To ſowing Beans broad-caſt, at 6d. per acre	0	6	0
To harrowing ſeed in, at 3s. per acre -	1	17	6
To dibbling in ſuch Beans as were left uncovered by the harrow, at 6d. per acre	0	6	0
To mowing, gathering, and binding up, at 5s. per acre - - - - -	3	2	6
To 5 quarters 6 buſhels of Seed-Beans, at 2l. 5s. od. per quarter - - -	12	19	3
Broad-Caſt	£.22	6	3
Drill Huſbandry	£.18	7	9½
Balance in favour of the Drill Huſbandry	£3	18	5½

*N. B. The previous working of the land is not brought into this account, but taken in the ſame ſtage of Drill and Broad-caſt management.

OBSERVATIONS.—Charging every expence attending both the Drill and Broad-caſt Huſbandry, it appears, that double the quantity of ſeed is uſed when ſown broad-caſt, than when drilled in drills eighteen inches apart; and the produce of a crop of Beans is (with me) moſtly one third leſs in quantity per acre by the Broad-caſt Huſ-

dry than by the Drill Huſbandry. The time of reaping the above crop of Beans was the laſt week in September, which was three weeks later than I ever reaped before, though ſown equally as early in the ſpring; but this backwardneſs was occaſioned by the ſeaſon, not by the Drill.

Mode of uſing the Straw.—Some of the ſtraw is uſed for litter, and ſome for cutting, and mixing with light corn for young ſtock, ſuch as colts, &c. and for cart and plough horſes; and when it is well got, there may be a great ſaving of hay; for, at the time of ſupping the horſes up, after they are bedded, give every horſe a ſmall armful before him, and he will need little or no hay in his rack, and will equally work as well, and keep his condition, as if his rack was ſupplied with hay; and that part of the ſtraw which he does not eat, ſerves for freſh litter for him the following night, and (with me) I think it makes the beſt manure, by putrifying ſo ſoon.

Nature

Nature of the Soil.—The ſoil of this field is a ſtrong hazel loam, about ten inches deep, and under that is a brown loamy ſand, twelve inches deep; under which ſand, in a part of about four acres, is a yellow rock: in all other parts of the field (under the ſand) there is marl, about four yards deep, under which is yellow ſand.

Horſe-hoeing.—The horſe-hoeing was performed in the following manner. The land being left quite even when the Beans were covered, I have a ſmall light machine, in the form of a plough, which is only two inches broad on the ſole or bottom part (which is alſo uſeful for hoeing potatoes); this machine was drawn up the ſide of each row of Beans, for the firſt hoeing, when they were about three inches high: the inſtrument, being ſo narrow, left a ſmall rib of earth in the centre of the drill; and, when they were about twelve inches high, the ſecond hoeing was performed with a double-mould board-plough, with two reeſts, four inches

inches broad on the ſole part, which was drawn up the centre of the drill, and divided the rib of earth, before left, to each row of Beans, which then made a perfect drill.

Sowing Wheat.—After the Bean-crop was cleared off the land, the firſt preparation for the ſowing of Wheat, was running the plough acroſs the drills, as deep as the bottom of the drills; this being done, I harrowed it with a harrow (which I call the cultivating harrow), which brings moſt of the weeds, &c. that are within the land, to the top. It was then run over with a common harrow, and all the weeds, &c. picked off, and laid by for compoſt, with the addition of horſe-dung, &c. It was then ploughed into butts of three yards broad, and thirty yards were ſown broad-caſt, and thirty yards ſown in drills (at nine inches), all through the field, which is now finiſhed, and is little inferior, for cleanneſs and good condition, to a ſummer fallow.

HENRY HARPER.

The ſubſcribers have viewed the field above mentioned, in Mr. Henry Harper's farm, and have conſulted the account ſtated, of the meaſurement of the field, from a plan lately taken, and have ſeen the Bean-drills, after the crop was reaped, but before ploughed up again for wheat; and have meaſured the diſtance of the drills, each of which correſpond as above ſtated. The crops of Beans, ſo far as might be collected from the appearance of ſtubble, appeared good, and the land clean in general, only from chickweed. We have alſo again viewed the land of the ſame field, after being ſown with Wheat, and finiſhed off in a complete manner, and examined the labourer who aſſiſted in thraſhing a part of the Bean-crop, to aſcertain the produce of the whole land; and believe, ſo far as we have obſerved from the information obtained, that the contents of the letter are truly and fairly ſtated.

HENRY HEATHCOTE,
Vicar of Walton.

S. HOLT,
Surveyor of Agriculture for the county of Lancaſhire.

Walton, Oct. 27, 1796.

Mr. MORE.

SIR,

BY laying the incloſed paper before the Honourable Society for the Encouragement of Arts, Manufactures, and Commerce, you will oblige,

SIR,

Your moſt obedient Servant,

HENRY HARPER.

Mr. MORE.

N. B. If a ſample of the Beans, which is very fine, be requeſted, it ſhall be ſent on the ſhorteſt notice.

To the Society for the Encouragement of Arts, Manufactures, and Commerce.

My LORDS and GENTLEMEN,

THE following experiments, with remarks on the different modes of the culture of Wheat, was executed in a field, of eleven ſtatute acres, in my farm, in the month of October, 1795. Twenty yards broad

broad was ſown broad-caſt, and then twenty yards broad in the different modes hereafter explained; ſo that no one mode ſhould have the advantage of the other, of having either better land, or in higher condition, and which had all the ſame dreſſings, &c. to the time of putting in the ſeed.

EXPERIMENT I.

The old mode of broad-caſt produce, was fourteen threave to the acre, clear of the tithe, and four buſhels in the threave. Weight 61lb. ½ per buſhel, neat, which is 7 quarters per acre, at 58s. per quarter, - - £.20 6 0

Straw, weight 300lb. per threave, at 3d. per ſtone, of 20lb. is 3s. 9d. per threave, and per acre, - - - 2 12 6

£.22 18 6

To 105lb. of ſeed, at £.5 2s. 8d. per quarter,* £. 1 2 5½

Sowing by hand, broad-caſt, per acre, 0 0 6

1 2 11½

Amount of Corn and Straw, per acre, £.21 15 6½

* The market price of Wheat is taken at the time of ſowing, and at the time of reaping, which makes ſo conſiderable a difference in the value, viz. £.2. 18s. 0d. and £.5. 2s. 8d.

EXPE-

EXPERIMENT II.

Cooke's Drill. Produce, was 13 threave to the acre, clear of the tithe, and 4 buſhels in the threave, weight 61lb ½ per buſhel, neat, which is 6 quarters and 4 buſhels per acre, and, at 58s. per quarter, amounts to - £.18 17 0

Straw, weight 300lb. per threave, at 3d, per ſtone, is 3s.9d. per threave, and per acre 2 8 9

£.21 5 9

	s.	d.			
To 87lb. of ſeed, at £.5 2s. 8d. per quarter, - -	18	7¼			
Sowing the ſeed with the drill, per acre,	1	6			
Covering the ſeed after drilling, per acre, . -	1	6			
Twice horſe-hoeing, at 1s. 6d. per acre,	3	0			
			1	4	7¼
Amount of Corn and Straw, per acre,			£.20	1	1¾

EXPERIMENT III.

Drills at nine inches, ſown by the hand. Produce fifteen threave to the acre, clear of the tithe, and 4 buſhels in the threave, weight 61lb ½ per buſhel, neat, which is 7 ½ quarters per acre, and, at 58s. per quarter, amounts to £.21 15 0

Straw, weight 260lb. per threave, at 3d. per ſtone of 20lb. is 3s. 6d. per threave, and per acre, - - 2 8 3

£.24 3 3

To

Brought forward - - -				£.24	3	3
To 105lb. of ſeed, at £.5 2s. 8d. per quarter,	£.1	2	5½			
Sowing ſeed, broad-caſt, per acre,	0	0	6			
Covering ſeed, per acre,	0	1	6			
Twice horſe-hoeing at 1s. 6d. per acre,	0	3	0			
				1	7	5½
Amount of Corn and Straw, per acre,				£.22	15	9½

EXPERIMENT IV.

Drills made at 12 inches, from centre to centre, and three rows dibbled right up the middle of the drill, at three inches from plant to plant, and one grain of corn in a hole.

Produce was twelve threave per acre, clear of the tithe, and 4 buſhels and 2 pecks in the threave, weight 62lb. per buſhel, neat, 6 qrs. 6 buſh. per acre, at 58s. per quarter, is - - -				£.19	11	6
Straw, weight 340lb. per threave, at 3d. per ſtone of 20lb. is 4s. 3d. per threave, and per acre, - - -				2	11	0
				£.22	2	6
To 35lb. of ſeed, at £.5 2s. 8d. per quarter,	£.0	7	3½			
Dibbling, per acre,	0	18	0			
Covering ſeed after dibbling, per acre, - -	0	1	6			
Twice horſe-hoeing, at 1s. 6d. per acre - -	0	3	0			
				1	9	9½
Amount of Corn and Straw, per acre,				£.20	12	8½

EXPE-

EXPERIMENT V.

Dibbled on the land, three rows, at three inches from plant to plant, and one grain of corn put in a hole, and a ſpace left between every third row, for horſe-hoeing.

Produce, eleven threave per acre, clear of the tithe, 4 buſh. 2 pecks in the threave, weight 62lb. per buſhel, neat, 6 qrs. 1 buſhel and 2 pecks, per acre, at 58s. per quarter, is - - - £.17 18 10½

Straw 320lb. per threave, at 3d. per ſtone of 20lb. is 4s. per threave, and per acre, 2 4 0

£.20 2 10½

To 35lb. of ſeed, at £5. 2s. 8d. per quarter, is £.0 7 3½

Dibbling, per acre, - - 0 18 0

Covering ſeed after dibbling, per acre, - - 0 1 6

Twice horſe-hoeing, at 1s. 6d. per acre, - - 0 3 0

1 9 9½

Amount of Corn and Straw, per acre, £.18 13 1

EXPERIMENT VI.

Dibbled on the land, two rows, at three inches from plant to plant, and put one grain of corn in a hole, and a ſpace left between every ſecond row for horſe-hoeing.

Produce 11½ threave, per acre, clear of the tithe, and had 4 buſhels and 2 pecks in the threave, weight 62lb. per

per buſhel, neat, 6 qrs. 3 buſhels 3 pecks, per acre, at 58s. per quarter, is - - £.18 15 2½
Straw, 3401b. per threave, at 3d. per ſtone of 20lb. is 4s. 3d. per threave, and per acre, 2 8 10½

£.21 4 1

To 31lb. of ſeed, at £.5 2s. 8d. per quarter, - £.0 6 7½
Dibbling, per acre, - 0 18 0
Covering the ſeed, per acre, 0 1 6
Twice horſe-hoeing, at 1s. 6d. per acre, - - 0 3 0

1 9 1½

Amount of Corn and Straw, per acre, £.19 14 11¼

EXPERIMENT VII.

The land dibbled all over, at 3 inches from plant to plant, and one grain of corn put in a hole.

Produce 10½ threave per acre, clear of the tithe, 4 buſhels 2 pecks in the threave, weight 61lb. ½ per buſhel, neat, and 5 qrs. 7 buſhels 1 peck, per acre, at 58s. per quarter, is - - £.17 2 6¾
Straw, 300lb. per threave, at 3d. per ſtone of 20lb. is 3s. 9d. per threave, and per acre, 1 19 4½

£.19 1 11¼

	Brought forward,			£.19	1 11½
To 40lb. of ſeed, at £.5 2s. 8d. per quarter, - -	£.0	8	6½		
Dibbling, per acre, - -		1	1	0	
Covering the ſeed, per acre,		0	1	6	
				1 11	0½
Amount of Corn and Straw, per acre,				£.17	10 10¾

EXPERIMENT VIII.

The land dibbled one row, at four inches from plant to plant, and four grains of corn put in every hole, and a ſpace left between every row for horſe-hoeing.

Produce ten threave per acre, clear of the tithe, 4 buſhels and 2 pecks in the threave, weight 60lb. per buſhel, neat, is 5 qrs. 5 buſhels per acre, at 58s. per quarter, is - - - -				£.16	16 3
Straw, 300lb. per threave, at 3d. per ſtone of 20lb. is 3s. 9d. per threave, and per acre,				1	17 6
				£.18	3 9
To 45lb. of ſeed, at £.5 2s. 8d. per quarter, -	£.0	9	7½		
Dibbling, per acre, - -		0	12	0	
Covering ſeed, per acre, -		0	1	6	
Twice horſe-hoeing, at 1s. 6d. per acre - -		0	3	0	
				1	6 1½
Amount of Corn and Straw, per acre,				£.16	17 7½

Remarks

Remarks upon the different modes of Culture.

EXP. I. I prefer the old mode of broad-caſt upon ſtrong heavy ſoils, ſuch as marl or clayey, or on any land that lies on a cold bottom, becauſe ſuch land requires to be laid round, and in ſmall ridges; in conſequence of which the drill will not work well, and dibbling would not anſwer on ſuch land.

EXP. II. Cooke's Drill may anſwer, where the land is flat, even, and dry.

EXP. III. I prefer making the Drills at nine inches diſtance, and ſowing the land broad-caſt, but with one third leſs ſeed than broad-caſt; for though there was more ſtraw in this mode than any other of the experiments, by being ſo thick in the Drills, and the ſtraw was lighter, not weighing ſo much to the threave, and the corn appeared not quite ſo well fed, yet, when cleaned, the produce was the ſame weight per buſhel, and more in quantity than any other mode. Therefore I prefer this mode to Cooke's

Drill; for I think it will do with full as little ſeed.

Exp. iv. This mode of dibbling I prefer before any other; for the land was dryer, and, in conſequence of the corn being dibbled up the centre of the drill, and by being dryer, the plants did not mourn ſo much as the others when the weather was wet.

Exp. v. This mode is not ſo good as two rows together; for, when they came to be hoed, the middle row did not receive ſo much freſh earth as the other two.

Exp. vi. This mode, of two rows, I prefer before three; for when they came to be hoed, they flouriſhed the moſt.

Exp. vii. This mode, of dibbling the land all over, does not do well; for the plants were too thin, and could not be hoed. They did not ſucceed well.

Exp. viii. This mode ſucceeded the worſt of any; for the ſtems from the plants appeared always more weakly than any of the other modes, although they had rather the advantage of the hoe.

If

If dibbling be practiſed, it ſhould be on light dry land; but upon any land the expences* of labour will over-balance the ſaving of ſeed: for the time, and number of hands it takes, prevent any attempts on a large ſcale, at leaſt to do it in proper ſeaſon, and while the land continues in condition; for if it be too wet, it will not dibble at all: and I do not think it will anſwer well on any land; for it is impoſſible to make a hole in the land that you can drop a ſeed into, but it will leave a kind of glaze round the hole, which being ſoon filled with looſe earth, when rain falls, it holds water, and ſtarves the plant. I thought this was the caſe with mine: and if dibbled at the ſame time when the drill or the broad-caſt is

* It has been frequently obſerved that dibbling may be performed by children, and therefore the expence is light. It is true that the fingers of young people may be better adapted to handle ſo ſmall a grain as wheat, than the fingers of grown people; yet every one knows the inattention and thoughtleſsneſs of childhood: and becauſe ſuch ſeeds are not ſeparated with eaſe, they will frequently drop, inſtead of one, probably half a dozen into one hole, whilſt the next, through the ſame careleſsneſs attendant upon that age, may omit the next hole; beſides, at this ſeaſon of the year, be the weather ever ſo temperate, the air is ſo cold as to produce

ſown, it will be ten days later than either, before it is ripe and ready to cut. However, after it was hoed, the dibbled came on more than the drilled. The firſt hoeing was the laſt week in March; the ſecond, the ſecond week in May. It was properly hoed, not ſcarified, for the earth was laid cloſe up to the plants. The hoeing was performed with a drill of my own conſtruction, which makes five drills at nine inches, five at twelve inches, three at eighteen inches, and three at twenty-four inches. And for hoeing, I have ſhares or ſucks, in the ſhape of a trowel, which I can fix on the points of the drills, and, by drawing it up between the drills, it divides the earth each way up to the plants, nearly equal to hand-hoeing. This drill will either drill or hoe. If the land be not quite even, it makes no alteration in the machine, for it depends on the man that holds it, to humour it accordingly as the land lies, which is eaſy to do.

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numbneſs in the extremities, to ſuch a degree as to prevent an ability to ſeparate the ſmall grains, the handling of which ſtill increaſes the degree of cold, and conſequently produces greater inactivity.—The ſize even of the leaſt bean renders the practice of dibbling more effectual in that article.

I prefer drilling to broad-caſt, on dry, weak, light, thin ſoil land, for any kind of grain, but more particularly for Wheat; for this kind of land is apt to loſe roots the latter end of March and beginning of April, which is the time the firſt hoeing ſhould take place, and which will prevent that diſeaſe.

The field on which the experiments were made, is a hazel, loamy ſoil, fourteen inches deep; two acres, bottom on a yellow rock; ſeven acres on a marl; and two acres on loamy ſand, about two feet deep, and afterwards marl. This field was marled thirty-three years ago, and has ever ſince been under the plough, nor has reſted more than having a crop of red clover, which was moſtly mown twice in the ſame year, and the ſucceeding year cropped with ſome ſpecies of grain.

In the year 1794 this field had red clover on it, the produce of which was very good. It was mowed twice; and early in the ſpring 1795 I ploughed it up, and ſowed it with vetches, which were cut off for

green crop; and as the land was cleared of the crop, it was ploughed thin; and when all the crop was cleared off, it lay about three weeks, and was then ploughed again, but not deeper than the firſt ploughing, upon which it appeared to be quite clean, and in good order. Being rather fearful of its not ſupporting ſuch a crop of wheat as I could wiſh, I made a compoſt, which was part marl and waſte ſoil, to which I put ten ſcore buſhels of lime, eighty tons of night-ſoil, coal-aſhes, ſweepings of ſtreets, &c. and, one week before it was turned over, I trenched into it, a foot deep, three hundred weight of pot-aſh, pounded fine, and turned it all over together; the lime was in its flowery ſtate: when turned, the field was all regularly ſet over with this compoſt, about twenty tons to the acre, and then ploughed up into butts of three yards broad, then ſown as above deſcribed.—The furrow was about nine inches broad, and four inches and a half deep.

But what was the cauſe of this produce being ſo much above the general average I cannot

cannot aſcertain; whether owing to the ſeaſon, or ſome unknown quality the pot-aſh might add, I cannot ſay, not having preſence of mind to keep a little of the compoſt clear of the pot-aſh. The field has produced good crops of Wheat before, and often as much, or more ſtraw, but never ſo much grain before; nor ever did I hear of ſo much corn being produced from the ſame breadth of land. And I ſhould feel ſome heſitation of laying this account before the public, were not the facts, both as to quality and quantity, confirmed by other teſtimony than my own, as will appear from the annexed certificates. The ſpecies of Wheat is the common Yellow Wheat, which I got from the South three years ago.

Although the experiments may not claim the premium offered, for a comparative eſtimate of the broad-caſt and drill-huſbandry, yet the experiments are of too important a nature to be withheld from the public, and upon too extenſive a ſcale, not to render them of importance. So far as my reading goes,

goes, I have never heard of any thing of equal extent and variety. I can venture to affirm, that nothing is aſſerted herein but the truth, and the reſults and facts have been carefully aſcertained; but the difficulty, the care, the attention and labour, to keep every part ſeparate, and to weigh each part, is a degree of trouble, of which thoſe who have not experienced ſuch things can have no conception; nor ſhould I have undertaken the taſk, had I previouſly known the great care and circumſpection neceſſary to the proper inveſtigation of ſo many circumſtances. Under all theſe embarraſſments I am not diſcouraged, but propoſe to proſecute the ſubject, and endeavour to aſcertain the comparative difference betwixt the Drill and Broad-caſt Huſbandry, having nearly thirty ſtatute acres under that management this ſeaſon, a very ſmall portion of which is dibbled, by way of confirming or confuting the experiments herein mentioned. I rely upon the candour of the Society, to whom this Paper is addreſſed, for a favourable interpretation

terpretation of my motive; and if farther ſanctioned by any honorary or pecuniary marks of their approbation, ſuch tokens of their regards will be gratefully accepted, and thankfully received by,

My Lords and Gentlemen,

Your obedient humble Servant,

Bank-Hall, Kirkdale, Feb. 1, 1796. HENRY HARPER.

WE, the underwritten, were requeſted by Mr. Harper to view the field intended for experiments, previous to its being ſown, but after it had been parcelled out into different lots, of twenty yards broad each, as deſcribed; and afterwards viewed it again, when the proceſs of ſowing, dibbling, and drilling, had commenced. We have no doubt in ſaying that, from what we ſaw, and from Mr. Harper's well-known veracity, the account here given is truly ſtated.

HENRY HEATHCOTE,
Rector of Walton.

JOHN HOLT,
Surveyor of Agriculture for the County of Lancaſter.

WE, the underſigned, being ſervants and labourers under Mr. Henry Harper, have aſſiſted in the different operations of ploughing, ſowing, dibbling, and drilling, thraſhing, winnowing, and weighing the different lots, and can aſſert, from our own knowledge, that the account which has been read to us is truly ſtated.

HENRY HIGGINSON, Servant.
WILLIAM BRINDLE, Labourer.

MR. Henry Harper, feeling ſome diffidence in laying before the public the uncommon produce of a crop of Wheat in 1796, wiſhed to know whether the tithe collected from the ſame field could be ſeparated, and whether I would oblige him, by thraſhing a certain part of it ſeparately, and which I fortunately was enabled to perform; and upon trial, found as under, viz.

Marketable Wheat, 4 buſhels, 1 peck, 6 quarts (Wincheſter buſhel), per threave, taken out by the riddle; and ſmall Wheat, about two quarts. Weight, per Wincheſter

cheſter buſhel, 59lb. This was weighed the 26th of January, 1797, and Mr. Harper's in November, 1796, which may account for the difference of weight.

N. B. A few of the ſheaves thraſhed were damaged by the mice.

EDWARD STABLE,
Tithe-Farmer for Kirkdale.

I, THE underſigned, purchaſed 75 buſhels of Mr. Harper's Wheat, of 61½lb. to the buſhel, grown in the field above deſcribed, in 1796, and can certify for its very ſuperior quality, and that the account above ſtated on that head is ſtrictly true.

GEORGE BLUNDELL, Corn Inſpector.

The Amount of Produce and Expence attending the Crop of Wheat.

To rent of field,	-	£.25	0 0
Taxes,	- - -	2	10 0
Repairs in gates, fencing, and ditching,	- -	0	7 6
		£.27	17 6

Three

				£.	s.	d.
Brought forward				27	17	6
Three times ploughing, at 7s. per acre, - -	£.11	1	0			
Two qrs. of ſeed, at £5. 2s. 8d. per quarter, - -	10	5	4			
Once harrowing, at 2s. 6d. per acre,	1	7	6			
Sowing ſeed broad-caſt, at 6d. per acre, - -	0	5	6			
Weeding, at 6d. per acre,	0	5	6			
Reaping, at 8s. per acre, -	4	8	0			
Carting home from field, &c.	4	8	0			
Thraſhing 77 qrs. at 2s. 8d. per qr.	10	5	4			
Carting to market, &c. -	5	0	0			
Carting ſtraw to market, at 1s. per load, - -	3	17	0			
Weighing ſtraw, &c. -	0	10	0			
				51	13	2
Carting 90 tons of marl, at 1¼d. per ton, - -	0	9	4			
Carting 40 tons of ſoil, at 4d. per ton, . -	0	13	4			
Two hundred buſhels of lime, at 8d. per buſhel - -	5	16	8			
Carting to the field, -	1	4	0			
Eighty tons of night-ſoil, &c. at 2s. 6d. per ton, -	10	0	0			
Carting to the field, at 4s. per 1½ ton, -	10	12	0			
Carting out of the ſtreets in the night, to a proper place, to be						

taken

taken away when convenient,						
at 1s. per ton -	£.4	0	0			
Three cwt. of pot-aſh, at 50s. per						
cwt. - -	7	10	0			
Carting ditto to the field -	0	1	0			
Trenching pot-aſh into the compoſt,	0	2	0			
Turning over the compoſt, -	0	6	0			
Carting and ſpreading the compoſt on						
the land, 4d. per ton,	3	13	4			
				44	7	8
Total expence				£.123	18	4
By 77 qrs. of wheat (the ſuppoſed						
average produce, according to						
the quantity already dreſſed),						
at 56s. per quarter,	£.215	12	0			
By 154 threave of ſtraw, at 3s. 6d.						
per threave - - -	26	19	0			
				242	11	0
Clear profit				£.118	12	8

This expence of labour is charged as if all the land had been ſown broad-caſt.

N. B. Now the general average which I ſhould have expected from this field, and with which I ſhould have been well ſatisfied, would have been four quarters per acre, and then the account would have been as follows:

Forty

Forty-four quarters, at 56s. per quarter.	£.123	4	0
The average of the ſtraw expected, would have been one third leſs, - -	17	19	4
Total amount of produce,	£.141	3	4
Expence	£.123	18	4
Clear profit	£.17	5	0

Although the produce of this amazing crop has not yet been clearly aſcertained, but an average drawn from what has actually been dreſſed, yet a fair account, when the whole is thraſhed, will be carefully taken and preſerved, and, if it be found to vary in a conſiderable quantity, ſhall be faithfully laid before the Society to whom this Paper is addreſſed.

The

TWENTY GUINEAS, being the Premium offered for having planted or drilled not leſs than ten Acres of Land with BEANS in the year 1796, and ſown the ſame Land with WHEAT in the ſame year, was this Seſſion adjudged to Mr. JOSEPH WEBSTER, of Bankſide, near Doncaſter, from whom the following Papers were received.

My LORDS and GENTLEMEN,

I TAKE the liberty of tranſmitting to you an account of ſixteen acres of land drilled with Beans in March, 1796, and ſown with Wheat the ſame year.

The ſort of Beans was the common Horſe-bean, drilled by Cooke's Drill: ſix acres were drilled, at twelve inches diſtance, with ten pecks per acre; ten acres were drilled with ſeven pecks per acre; two rows at nine inches, with an interval of twenty-ſeven

inches between every two rows. The above ſixteen acres were drilled the 14th and 15th of March, and reaped from the 29th September to the 6th of October, 1796. The produce of the above ſix acres was forty-eight buſhels and a half per acre; the produce of the ſaid ten acres was fifty-one buſhels and three-quarters per acre. The ſtraw was uſed in the ſtable, cow-houſes, and yard, for litter. The expence of drilling, eight pence per acre; harrowing after the drill, three pence per acre. The ſix acres were ſcarified twice, and horſe-hoed once, at ſixpence each time, *i. e.* one ſhilling and ſixpence per acre the whole. The ten acres were hand-hoed, in particular places, between the rows at nine inches, at one ſhilling per acre, and three times ploughed between the intervals of twenty-ſeven inches wide, at one ſhilling and ſixpence per acre each time, *i. e.* four ſhillings and ſixpence per acre the whole. The ſoil was originally a ſtrong clay, but now greatly improved by a ſediment or mud (commonly

(commonly called warpe) from the river Dun.

I am,

My Lords and Gentlemen,

Your moſt humble ſervant,

JOSEPH WEBSTER.

Bankſide, near *Thorne*, *Doncaſter*,
Yorkſhire, *Oct.* 30, 1797.

I JOHN SANDERSON, of Dikes Marſh, in the pariſh of Thorne, do hereby certify, that Mr. Joſeph Webſter, of Bankſide, in the pariſh of Thorne, and county of York, drilled, in the month of March, 1796, ſixteen acres of land with Beans, and ſowed the ſame with Wheat in the ſame year, viz. 1796; as witneſs my hand, this 30th day of October, 1797,

JOHN SANDERSON.

Dikes Marſh, *Oct.* 30, 1797.

I, JAMES CUTLER, of Thorne, do hereby certify, that Mr. Joſeph Webſter, of Bankſide, in the pariſh of Thorne and county of York, drilled, in the month of March, 1796, ſixteen acres of land with Beans, and ſowed the ſame with Wheat in the ſame year, viz. 1796; as witneſs my hand, this 30th day of October, 1797,

JAS CUTLER.

Thorne, Oct. 30, 1797.

SIR,

I RECEIVED your letter, dated 28th of November, and beg leave to inform you that I ſigned a Certificate, dated the 30th October, 1797, certifying, that Mr. Joſeph Webſter, of Bankſide, in the pariſh of Thorne and county of York, drilled ſixteen acres of land with Beans in the month of March, 1796, and ſowed the ſame with Wheat in the ſame year, viz. 1796; which land Mr. James Cutler, that wrote the other Certificate,

tificate, has meaſured, and there are ſixteen acres and ſeven perches ſtatute meaſure.

I am, SIR,

Your very humble ſervant,

JOHN SANDERSON.

Ditch Marſh, Dec. 16, 1797.

The Premium offered for Comparative Culture of TURNEPS, Claſs 90, being the GOLD MEDAL, or the SILVER MEDAL and TEN GUINEAS, was this Seſſion adjudged to Mr. JOHN EXTER, who made choice of the SILVER MEDAL and TEN GUINEAS, and whoſe Papers on the ſubject are here inſerted.

SIR,

HAVING, for fifteen years paſt, paid great attention to Agriculture in general, and the cultivation of Turneps, as food for ſtock, in particular, I have, in the courſe of that time, made a variety of experiments, with a view to aſcertain the advantages ariſing from different modes of managing them. I take the liberty, therefore, of offering my obſervations on that crop, to your Society's attention. I have, this year, made a comparative trial on a field of ſix acres and a half (the ſucceſs of which is herewith ſent to you),

ou), with a view to promote the Society's bject; for which they have offered their remium No. 90, which I now take the iberty of becoming a claimant for, and vhich if I ſhould be conſidered worthy of, n conſequence would afford me a high gra- ification, which would only be exceeded by he pleaſure of reflecting on having, in any vay, aſſiſted in forwarding the views of the ociety, and perhaps the agriculture of my ountry. I have endeavoured to confine my bſervations within as ſmall a compaſs as I ould, to be explicit. I am, with the ighеſt reſpect for the laudable intentions of he Society,

SIR,

Your humble Servant,

I. E. P. B. D.

My correſponding paper, as ordered by the Society, deſcribing my addreſs, &c. &c. containing the certificate of the experiment I produce, is marked with the letters I. E. P. B. D.

A ſix-acre field of light ſandy loam, from four to five inches deep, on a clayey ſubſtratum, which had been previouſly exhauſted by white ſtraw crops, and which I rent at 30s. per acre, though I conſider it too dear in the price (the ſoil of which differs but very little in any part of the field), was ploughed from a barley ſtubble, in December, 1796, and was croſs-ploughed the laſt week of May, ſcuffled acroſs in June, four acres of which were manured with dung, and the remainder by the ſheepfold. The part dunged had 120 horſe-loads of rotten ſtall dung, 250 cwt. each, per acre; the part folded had at the rate of 1200 ſheep per night, per acre. The whole field was ploughed again as ſoon as the manuring was completed, and on the 15th of July was ſown acroſs the different manurings, as follows: half the field broadcaſt, one pound of ſeed per acre; one acre of the remainder, drilled with Cooke's drill machine, with about half a pound of ſeed per acre, at eighteen inches diſtant from row to row; and the remainder with the ſame

ſame machine, three quarters of a pound per acre, in rows, at a foot aſunder. The weather being favourable, with frequent ſhowers, the whole field planted ſufficiently well for a crop; but the different parts varied much in their progreſs in getting into the rough leaf, and conſequently eſcaping the danger of the fly. The drilled, at a foot apart, ſeemed to loſe the ſmalleſt number of plants; the drilled at eighteen inches, the next; and the broad-caſt, the largeſt number; and conſequently was, in many places, patchy, with intervals of four or five feet without any plants at all. There was alſo a degree of vigour obſervable on the part manured with dung, much ſuperior to that manured by the ſheepfold; the former got into the rough leaf many days ſooner, and ſaved a much larger number of plants. The whole crop was hand-hoed once; the broad-caſt coſt 8s. 2d. the drilled part 5s. 10d. per acre.—A large quantity of ſeed weeds, which had been carried out with the dung, had ſhown themſelves previous to the hoeing, and many

many ſprung up again after, and were more particularly apparent in the broad-caſt part of the field, and in the intervals where that crop had failed: the drilled part had not nearly as many weeds, from the turneps growing faſter, and keeping them under, or perhaps their being more effectually cut up by the hoe, in the intervals between the rows. The part of the field manured with dung was all ſuperior in its growth to the part folded on, throughout the autumn, and is at this time as three to two better. The ſuperior advantage of drilling to broad-caſt is more particularly apparent in the part of the field manured with the fold; and the twelve-inch intervals are alſo in this part more ſuperior to the eighteen-inch intervals, than on the part manured with dung.

February 27, 1798, four ſquare perches of each of the different modes of ſowing, were meaſured off by the Miniſter of the Pariſh, and the Overſeer of the Poor, who is a farmer, and rents £.400 per annum in the ſaid pariſh, in preſence of ſeveral other

other perſons; and the turneps drawn from each portion were ſeparately weighed, their tops and tails having been previouſly cut off; and the produce of clean roots was as follows:

The four perches drilled at a foot,	962
The four perches drilled at 18 inches,	888
The four perches broad-caſt,	555

I think it right here to remark, that the four perches of the broad-caſt fixed on were more fully ſtocked with good plants than the general average of the broad-caſt part, theſe four perches having ſcarcely a failing ſpot. The broad-caſt part in general being ſomewhat patchy, and the drilled pretty uniformly filled with plants, over all the field; I am certain, had the whole of each portion been weighed, the drilled would have exceeded the broad-caſt more than two to one. The bulbs of the drilled turneps were rounder, and more nearly of a ſize, than the broad-caſt, which I think muſt be owing to the more equal diſtances their

their roots had to feed in; and perhaps to this circumſtance, more than any other, it owes its extra produce.

The following remarks on the cultivation of Turneps have been made by myſelf, in ſucceſſion of practice for fifteen or ſixteen years; and I therefore take the liberty of adding them, as I can declare them founded on obſervation.

Soils for Turneps.

Sandy loams, in good heart, are moſt favourable to their growth, though they will thrive well on ſtrong loams, if they are not wet: but on clayey, thin, or wet ſoils, they are not worth tilling; the crop is always poor, and the land injured by them.

Preparation of the Soil for them.

Plough three or four times; the firſt time before Chirſtmas, and harrow or dig the land as often as it is weedy; and always previous to the ploughings, manure ſhould be laid on immediately before the laſt plough-

ing.

ing. If the land is dry, plough it quite flat; if the ſoil is diſpoſed to be wet or ſpringy, gather it into beds or ridges, ſufficiently high to keep it dry; or gather it, after manuring, into four furrow ridges, and drill on the top of each ridge; and plough the intervals twice during the growth of the crop, firſt ploughing off from the ſides of the ridges, and next back again, up to them. Hand-hoe the tops of the ridges.

Paring and burning the turf, at firſt breaking up old ſwards, is the beſt preparation in many ſituations. After paring and burning, plough twice, the firſt time very thin; then ſpread the manure, and turn it in with a full-depth furrow, on which ſow immediately, and harrow once to cover the ſeed.

Manuring.

Land cannot be too rich for Turneps, eſpecially if the crop is to be carted off from the land. The beſt manures I have experienced are as follow: I place the beſt firſt, the others

others in ſucceſſion, according to my opinion of their merits; 1. dung, 2. ſoap-aſhes, 3. ſheepfold, 4. lime; the laſt the leaſt to be depended on. I think it is of very little uſe in ſecuring the young plant from the fly, but it promotes the after-growth of the crop. I think all the noſtrums offered as preſervatives againſt the fly are mere quackery. Good manuring, with freſh dung, juſt rotten enough to plough under, is the beſt; ſpread your dung juſt freſh before the plough, and as ſoon as poſſible after the laſt ploughing.

Seed and Seed proceſs, &c.

The tankard turnep the beſt for early ſeed, the white round ſtock for the middle ſeaſon, the green top for late ſpring ſeed. Sow new ſeed in preference to old: if broad-caſt, one pound and a half per acre; and harrow once at a place to cover it. I have often mixed my ſeed in damp ſaw-duſt, for the ſake of increaſing its bulk, and diſtributing it more regularly, allowing half a

buſhel

buſhel of ſaw-duſt to the quantity of ſeed per acre ſown broad-caſt. If you drill, half the ſeed is ſufficient, and depoſit it from one inch and a half to two inches deep; if the ſoil is damp at the time, the better. The placing Turnep-ſeed deep in the ſoil accelerates the growth of the plant, by giving it moiſture, and gets it ſooner out of the power of the fly. The beſt diſtance for the rows appears to be at one foot apart, except for the tankard turnep, in very rich ſoils, to be eaten off early, where perhaps eighteen inches may be equally advantageous. I have ſeveral times drilled my turneps in very foul land, two rows at a foot aſunder, with an interval of two feet, the narrow interval hand-hoed, and the wide interval twice ploughed with the common plough; and this far exceeded the broad-caſt in the ſame field, both in fallow and crop.—Never harrow fine, or roll the land after ſowing the ſeed: the more ſmall clods are left on the ſurface the better, provided they do not exceed the

ſize

ſize of a turkey's egg. Horſe-hoe the drilled, and hand-hoe the broad-caſt crops, and both at an early period, viz. as ſoon as the plants expand their leaves as wide as a crown-piece. By early hoeing the weeds are checked, and the crop forwarded in growth. The operation may be repeated if weeds come on again. In general, a ſecond hoeing is neceſſary.—From repeated trials, I am ſatisfied that drilling Turneps is preferable to ſowing them broad-caſt on every ſoil where the land is not ſo declivous as to prevent ſowing with a drill, and even on lands too ſtony to admit the horſe-hoe: it diſtributes the ſeeds more regularly, and depoſits it to any depth required, by which it is often ſecured from the fly, by being accelerated in its growth; and, in ſoils that will admit the horſe-hoe, it leſſens the expence of hoeing more than one half: and, beſides producing a better Turnep-crop, it prepares the land better for the crop of corn that follows it than any hand-hoeing whatever. Beſides, Turneps always come to

hoeing

hoeing in the buſy time of harveſt; and when you cannot ſpare men to hand-hoe at all, a man, boy, and horſe, will horſe-hoe five or ſix acres per day.*

Application of the Crop.

I have uſually given my Turneps to different ſtock, viz. ſheep and bullocks, as ſuited me beſt at the time: but I think the beſt application of them is to fat ſheep, who are to eat off the freſh-ſtocked part; and their leavings may be eaten by lean ſheep that follow them, or yearling cattle, if the land is dry enough to bear them. If the land is damp and poachy, they ſhould be carted off for cattle to a dry piece of land, or a yard adjoining. The beaſts ſhould have hay or ſtraw, as much as they will eat with them. Some years ſince I made an experiment to aſcertain what would be

* The experiments referred to, and the horſe-hoeing, have all been executed with Mr. Cook's Machine, which I conſider the moſt complete Drill Machine and Horſe-Hoe that I have had an opportunity of working with.

the difference of giving cattle hay or ſtraw to eat with them. I took twelve beaſts, in the ſame ſtate of fatneſs, and which had been kept the preceding ſummer together, and tied them up in different yards; ſix had hay with the turneps, and ſix had ſtraw. The cattle fed with hay were finiſhed and ſold in May, the others in June. I have not repeated the experiment, as I was ſatiſfied from this that it would not pay to feed turnep ſtock on hay, if they are to go to graſs after. I find Turneps of great uſe in rearing calves. I always give them as much hay as they will eat with them, and never permit them to drink, or give them any milk after I get them to eat Turneps, which they generally take to at about ten weeks old.

I bring them to eat Turneps, by keeping them twenty-four or thirty hours without any milk or water, and then cut the Turneps into thin ſlices, and put ſome of them into their mouths; this ſoon brings them to pick them up from their mangers.

WE,

WE, whoſe names are hereunto ſubſcribed, the miniſter and overſeer of the poor of the pariſh of Pilton, in the county of Devon, do hereby teſtify, that on the 27th day of February, 1798, we viewed a crop of Turneps, of ſix acres and a half, cultivated by Mr. John Exter, in the ſaid pariſh, the one half of which crop was ſown broad-caſt in the common mode of the country, and the other half drilled in two different methods, viz. one acre in drills with intervals of eighteen inches, and the remaining two acres and a half in drills at one foot apart; and that we meaſured off four ſquare perches of each, and drew up and weighed the produce of clean Turneps, their tops and tails being previouſly cut and cleaned off, and that we found the produce of each part as follows:—

	lb.
The four perches drilled at a foot -	962
The four perches drilled at 18 inches	888
The four perches broad-caſt - -	555

And we think that the fallow on the part drilled was much finer, cleaner, and in better condition for the ſucceeding ſpring crop than the broad-caſt part; and that the perſon who managed and hand-hoed the ſaid crop was preſent at the ſame time, and aſſured us that the manuring and cultivation of the ſaid ſoil differed in nothing but the mode of ſowing; that he hoed an acre of the drilled crop in five days with more eaſe than he could hoe the acre broad-caſt in ſeven; and that we were, from this experiment, induced to believe that the method of drilling Turneps adopted by Mr. Exter is far ſuperior to broad-caſt ſowing.

Witneſs our hands,

WM. SPURWAY, Miniſter of Pilton,
ROBT. CAWSEY, Overſeer of the Poor.

The

The Thanks of the Society were this Seſſion given to Mr. HENRY HARPER, of Bank-Hall, in Kirkdale, Lancaſhire, for the following Communication relative to the Culture of POTATOES, and the application of that Root to the feeding various kinds of Stock.

Potatoe Culture on my Farm, which is nearly the ſame through both Lancaſhire and Cheſhire.

OF the early ſort there are a great many kinds, and are planted in various ways. The beſt early kind are the Broton's Dwarfs, for they have never yet been known to curl; and they are always good, though there are many ſorts that may, by chance, over-crop them for a ſeaſon or two, and then run off to curl. The next early ſort I prefer, are the Dwarf Manleys, which come in about two weeks later, have never been known to curl, and are always good; and, if the

land be made rich, they will crop nearly equal to any winter ſort. The next that comes in to theſe are the Champion, which always crop well, but are not much eſteemed here; for they have a ſtronger coarſe taſte than any of the other ſorts. (For the management of theſe, in their culture, ſee the Lancaſhire Report.)

The general Crop for Winter-ſtore.

The beſt time for planting, is from the firſt of May to the twelfth, to have real good Potatoes; but there are often great crops obtained, which are planted from the twelfth to the thirty-firſt. There are a great many ſorts of theſe; but for houſe uſe I prefer planting a few of the Scotch White: for the general planting, I prefer the Pink-eye; and, for fear of the curl, I every year change my ſeed, and get of thoſe that have been planted on the moſſes. Theſe put out large branches, which keep the land clean; and if they keep clear of the curl, they always crop well, and will keep in

in great perfection for houſe uſe. Then, after Midſummer, the Apple Potatoe will keep the longeſt in perfection; but I ſeldom get above half a crop of them, and they are troubleſome to boil; for it is very rare that you can get them thoroughly boiled to the heart.

For Cattle, &c.

I prefer planting the Ox-Noble and the Cluſter Potatoe (to be planted any time from the firſt of May to the thirty-firſt); for theſe will crop well on almoſt any kind of land, if ever ſo much exhauſted, and with little manure; and they put out large branches, which keeps the land clean. Of theſe ſorts I get three buſhels, where I only get two of the others, and am always more certain of a crop; but their value nearly reduces them to the ſame as the others, for they are moſtly near one-fourth leſs in value per buſhel.

From the Scotch and Pink-eyes, if on old ploughed arable land, I get two

hundred and forty buſhels, the ſtatute acre, of ninety pounds each; from the Ox-Noble, or Cluſter Potatoe, I get three hundred and twenty buſhels, of ninety pounds each.

Now, to aſcertain the value of the land, and of manure, entirely depends on the diſtrict; but I ſay, on my farm:—

Two hundred and forty buſhels of Potatoes, at 1s. 4d. per buſhel				£.16	0 0
Rent of land, taxes, &c. per acre	£.2	5	0		
Twice ploughing, 8s. per acre	0	16	0		
Once harrowing, ditto, -	0	4	0		
Drilling, ditto, . - -	0	4	0		
Manure, 18 tons, at 6s. per ton	5	8	0		
Carting manure on the land, at 10d. per ton - - -	0	15	0		
Spreading in the drills - -	0	1	6		
Sets, 20 buſhels, at 1s. 4d. per buſhel - - - -	1	6	8		
Cutting ditto, - - -	0	2	6		
Covering ſets with the plough -	0	4	0		
Covering them a few days before coming up - - -	0	4	0		
Ploughing the drills down -	0	4	0		
Hand weeding - - -	0	2	0		
Getting up, 3d. per rod -	2	0	0		
				14	3 2
Profit clear, per acre, by Scotch and Pink-eyes				£.1	16 10

The

	£.	s.	d.
Three hundred and twenty buſhels of Oxnoble or Cluſter Potatoes, at 1s. per buſhel,	16	0	0
Rent of land, taxes, &c. per acre, £.2 5 0			
Twice ploughing, at 8s. per acre, 0 16 0			
Once harrowing, - - 0 4 0			
Drilling, - - 0 4 0			
Manure, 12 tons, at 6s. per ton 3 12 0			
Carting manure on the land, at 10d. per ton, - - 0 10 0			
Spreading in the drills, - 0 1 6			
Sets, 20 buſhels, at 1s. per buſhel, 1 0 0			
Cutting ditto, - - 0 2 6			
Laying in the drills - - 0 2 6			
Covering ſets with the plough 0 4 0			
Covering them a few days before coming up - - 0 4 0			
Ploughing down, - - 0 4 0			
Ditto up, - - - 0 4 0			
Hand-weeding, - - 0 2 0			
Getting Potatoes up, 3d. per rod, 2 0 0			
	11	15	6
Profit clear, per acre, by the Oxnoble and Cluſter Potatoe,	£.4	4	6

If I plant on freſh land, ploughed up from a ſward of graſs, and a crop of oats taken the year before, the produce of the Pink-eye, &c. will moſtly be three hundred and twenty buſhels

buſhels per acre; the Oxnoble, &c. four hundred and eighty buſhels per acre, and with one-fourth leſs manure. All the other out-goings the ſame as the others.

	£.	s.	d.
Three hundred and twenty buſhels of Pink-eye, &c. at 1s. 4d. per buſhel, - -	21	6	8
Out-goings on ditto per acre, - -	13	5	2
Profit clear, per acre, on do. on this kind of land, £.	8	1	6
Four hundred and eighty buſhels of Oxnoble, &c. at 1s. per buſhel, - - -	24	0	0
Out-goings on ditto, per acre, -	13	5	2
Profit clear, per acre, on ditto, on this kind of land, - - - - £.	10	14	10

If they are got for a market, the expence runs high upon them, they are ſo heavy an article, and particularly when they are conveyed ten, fifteen, or twenty miles; but, when carried ſuch diſtances, the land, &c. is generally cheaper, and they often crop as well with leſs manure.

The

The drills I make are, if on old ploughed arable land, one yard; if on freſh land, thirty inches; which is for the moſt part the general practice with others. What is meant by covering them a few days before they ſhoot up, is this: there is a ſmall rib of earth left in the centre of the drill, at the time the ſets are covered with the plough when they are planted, which is divided each way with a double mould-board-plough, or a common plough. This practice is to keep the weeds down, and make the plants ſhoot out ſtronger. The ploughing them down, is when they are grown eight or twelve inches high. This is a ſmall furrow, ploughed down each way from the plants, but not ſo as to injure them, which deſtroys all the weeds but thoſe that may grow amongſt the plants, which are then pulled out by hand. In this ploughing down, they only lie three or four days, ſo as to deſtroy the weeds, if any, and then the earth is ploughed up each way again to the plants, and thrown amongſt them as much

much as poſſible, but not ſo as to injure them. When this is performed, they are finiſhed till the time of taking them up out of the land.

It is rather difficult to fix any average for the crop; for if a ſufficient rain does not fall ſoon after they have come to the ſhape of potatoes, the crop may be cut off to one half, or third, or fourth part. If they get tolerably well ſatisfied with wet at this time, they do not require much after.

Some may ſay I ſet them too thick. My mode is, for Pink-eyes, &c. ſix or ſeven inches; for the Oxnoble, &c. ſeven or eight inches diſtance from plant to plant, or ſay, from ſet to ſet. The average I obtain from this mode, is from fifteen to twenty, and ſome chance times, thirty buſhels, for one buſhel ſetting. For I find by experience, that by too thin planting I am ſubject to more miſproving crops; and when thin ſet, if they crop well, they will grow ſo large, that they will be hollow in the middle, and then they

run to water, and loſe both in their weight and quality.

Bank-Hall, Kirkdale, May 3, 1797.

The value and uſe of Potatoes on my farm, for feeding ſtock, milking-cattle, &c. will both pay and ſave at 1s. the buſhel, of ninety pounds, when the prices of corn are as follows, viz. Wheat, from 7s. to 8s. the buſhel, of ſeventy pounds; Barley, from 4s. to 4s. 6d. the buſhel, of ſixty pounds; and Oats, from 2s. 4d. to 2s. 10d. the buſhel, of forty-five pounds. Potatoes, either for feeding ſtock, or milking, fifteen pounds, given raw, with one pound and a half of corn, either ground or boiled, is equal to ſix pounds of corn.

			£.	s.	d.
I ſay, keep for one week, two feeds per day, is					
84lbs. of corn, at 4s. per buſhel, of 60lbs.			0	5	7
Two buſhels and 30lbs. of potatoes,	s.	d.			
for one week, at 1s. per buſhel,	2	4			
Twenty-one pounds of corn, at 4s. per buſhel, of 60lbs. - -	1	4¾			
			0	3	8¾
Balance in favour of Potatoes and Corn for one week, - - - - -			0	1	10¼

Feeding Pigs, either for Fat or for Pork, with Potatoes and Flour.

Eight pounds of Potatoes and one pound of Flour are equal to four pounds of either meal or flour; but as in feeding of pigs there is ſuch an uncertainty in their eating, I ſay, one buſhel of Potatoes, and eleven pounds of Flour, are equal to forty-four pounds of Flour, at four ſhillings per buſhel, of 60lb. weight,

	s.	d.	£.		
			£.0	3	$0\frac{1}{4}$
One buſhel of Potatoes,	1	0			
Eleven pounds of Flour, at 4s. per buſhel, of 60lb.	0	9			
To ſteaming or boiling the Potatoes	0	3			
			0	2	0

Balance in favour of Potatoes and Flour, &c. in feeding pigs, by one buſhel of Potatoes, and eleven pounds of Flour, £.0 1 $0\frac{1}{4}$

N. B. When I feed either beaſts or pigs with Flour and Potatoes, after ſome time at the firſt, when they have been well fed, they will abate in their eating; and when this is perceived, I then take all the hull or bran out of the flour, as it is then of no uſe either to beaſt or pig; but if kept in, will prolong their time of feeding and making up to fat in the inſide; for when it is taken out,

out, they will both make up better, and in nearly one half of the time that they would if the hull or bran of the corn was not taken out; and when taken out, it is uſeful for many other good purpoſes, ſuch as feeding ſtock almoſt of any kind, keeping dogs, &c. Eight ounces of Potatoes, and one ounce of meal, are equal to four ounces of meal. I ſay, the keep of a dog for one week:

To 5lb. 4 oz. of Meal, at 2d. per lb. -			£.0	0 10½
To 10lb. 8 oz. of Potatoes, at 1s. per buſhel, of 90lb. -	0	0 1½		
To boiling, &c. - -	0	0 2		
To 1lb. 5 oz. of Meal, at 2d. per lb. - - -	0	0 2½		
			0	0 6
Balance in favour of Potatoes and Meal for the keep of a dog one week, - -			£.0	0 4½

There is more profit in feeding geeſe, turkeys, and fowls of every ſort, with Potatoes and meal, mixed, as for dogs, than there is by the keep of dogs: they will feed fatter, and in nearly one half of the time that they will with any kind of corn, or even meal

meal by itſelf. Potatoes that are either broiled or ſteamed, as ſoon as they are done muſt be bruiſed ſmall while they are hot; for if they are ſuffered to grow cold, they will not bruiſe ſo ſmall; and the finer they are made, the better they are; and they muſt either be ſteamed or boiled freſh every day; and the quantity of flour or meal that is to be put to the Potatoes muſt not be put to them till they are going to be given for feed.

Potatoes, either boiled or ſteamed, or given raw, according to the mixture given with them, pay equally as well for cart or plough horſes, as they do for cattle, &c. and are of the ſame value for that uſe on my farm.

The aforeſaid experiments are what I have practiſed on my farm, therefore I can aſſert the report here ſtated to be true: it is from real practice, and not from imaginary theory.

Any gentleman or farmer, &c. that may think theſe remarks worthy of notice, muſt take

take care that the mixtures are all regularly executed; for if they are not, property will be waſted, and the ſtock, let it be of whatever kind it may, will be going backward, and the time prolonged, and attended with three times the expence, and you become diſappointed; and then all is condemned, which is often through the neglect of ſervants, &c. and particularly when it is attended with a little more trouble.

Stock, whether for feeding or milking, never do all years alike with me, although their keep be the ſame, both of graſs and houſe-feeding: therefore, if I try any freſh experiment, I never condemn it for miſproving one year; for, if I think there is any proſpect, I try it again, if on ever ſo ſmall a ſcale; for every thing ſhould have a fair chance, before it is laid aſide.

I do not confine myſelf to the Potatoe culture for the uſe of ſtock alone; I grow Turneps in great perfection, which I moſtly draw off the land; and I find, that both

together, they anſwer better than all of either Turneps or Potatoes; but Potatoes I can keep for the uſe of green crop all the ſpring, and even to Midſummer if I had occaſion for them.

Some people are of opinion that Potatoes exhauſt the land more than Turneps, but my ideas differ; for if the potatoe land was to be laid dry, and lie ſo for the winter after the crop is taken off the land, it would be equal to turnep land, for any ſpring crop that the land would bear; but is moſtly ſown with wheat, let the ſeaſon turn out ever ſo bad, and, by being ſown in bad condition, it moſtly leaves the land foul. If it happens to be a bad ſowing ſeaſon with me, I never ſow my potatoe land with wheat, but leave it dry, and let it lie for the winter, and it is always in excellent order for any early ſpring crop, ſuch as the land will bear.

My remarks on my former Papers anſwer my expectation in every reſpect; that on ſalting hay, turns out to great advantage; that

that on ſtraw, for manure, will pay any gentleman or farmer to purchaſe ſtraw for his farm, at 2½d. the ſtone of twenty pounds, to make into manure on his farm, better than carrying it to market, either for mixing compoſts, or mixing with other manure, particularly where you have reſervoir water. That on the compoſt which was ſet on the graſs land, now is as forward, and appears to be as promiſing for a crop of hay-graſs, as where the real manure was ſet.

I remain,

My Lords and Gentlemen of the
Honourable Society,

Your obedient humble ſervant,

HENRY HARPER.

N. B. I have dibbled Wheat this laſt ſowing ſeaſon, but on a ſmaller ſcale; and I have ſet ſome that is tranſplanted; but it appears to me that the expence attending it will over-balance any ſaving of ſeed, &c.

Drilling and hoeing, on thin light ſoils, will, in my opinion, anſwer better by one third more in the crop than the broad-caſt. I have drilled nearly one half of my Wheat, now growing on both ſtrong heavy ſoils, and light, thin, ſandy ſoils, &c.

The

The GOLD MEDAL, or THIRTY GUINEAS, at the option of the Candidate, being the Premium offered for cultivating the True RHUBARB, was this Seſſion adjudged to Mr. THOMAS JONES, of Fiſh-ſtreet-hill, from whom the following Papers were received.

Mr. JONES made choice of the pecuniary Reward.

SIR,

IF ever the cultivation of Rhubarb in this kingdom becomes ſo extenſive as to ſuperſede the neceſſity of its importation; to the Society for the promotion of Arts, Manufactures, and Commerce, will the community be indebted for an advantage, the magnitude and importance of which cannot be too highly appreciated. From whatever cauſe, which it is unneceſſary here to inveſtigate, certain it is the conſumption of this valuable

drug is increaſed, and continues to do ſo to a very great degree. All calculation, from a variety of circumſtances, muſt be vague; but I do not think Sir William Fordyce, in ſpeaking of the value of the importation, is much miſtaken, when he eſtimates the annual amount at £.200,000 ſterling. Whether this ſtatement is true to the extent or not, how forcibly it muſt ſtrike to the conviction of every one, and how much to be lamented, that a country like England, whoſe commercial conſequence is ſolely dependent on the induſtry of its inhabitants, and the productions of its ſoil, ſhould be indebted to other climates, and other ſoils, for that which, I am more than ever perſuaded, is congenial to its own!

The Society, feeling all the force of this obſervation, have endeavoured, for a conſiderable period, to promote a remedy; and every attentive obſerver cannot fail being impreſſed with the wiſdom and prudence that have governed their conduct.

Till the fact was rendered ſo indiſputable

as

as to defy all controverſy, inſtead of ſtimulating the ſpeculative to undertakings, moſt certainly very expenſive, and after all of doubtful benefit, they firſt confined themſelves within ſuch a limit, as that the requiſition apppeared more like an experiment than any thing elſe. In time, certain claimants, preferring their different pretenſions, eſtabliſhed by actual experiment the practicability of the meaſure; and hence, with a perſeverance and liberality that will ever redound to their honour, they now ſtipulate for more extenſive performances, and, beſides their honorary GOLD MEDAL, offer this year a handſome pecuniary reward, at the option of the claimant.

It would ſeem too much like affectation, were I, on the preſent occaſion, to diſclaim every idea of pride; I freely confeſs the repeated favours of ſuch an Inſtitution, and that perhaps I may have been, in ſome meaſure, inſtrumental in forwarding its patriotic deſigns, are conſiderations calculated to influence a mind leſs ſuſceptible of vanity

than I apprehend mine to be. Yes, Sir, in ſending you the encloſed certificate I cannot reſtrain my feelings: I do experience a conſiderable degree of pride as well as pleaſure, being conſcious of having fulfilled my pledge to the Society, and entertaining the flattering hope of being again honoured with its approbation.

I have heard it aſked, that as the advantages have been repreſented as ſo apparent, whence is it that the cultivators of Rhubarb are not more numerous, and how it happens that an object of ſuch obvious benefit ſhould ſtand in need of any farther encouragement?

Theſe queſtions will require no anſwer, when it is recollected that, however inviting the advantages may be, their diſtance alone is enough to operate as an almoſt inſurmountable obſtacle to a general cultivation; but the more ſo, when it is further conſidered, that after all they are not quite ſo certain as the projector may flatter himſelf.

To

To influence therefore the generality, and particularly thoſe claſſes (who muſt be engaged in this undertaking to produce all the effect we deſire, more eſpecially as in the preſent caſe, where the return cannot be either prompt or ſpeedy) to deviate from their ordinary habits and purſuits, ſuch a ſyſtem of rewards muſt be adopted as to ſuit the general diſpoſition. It was, I dare ſay, this conſideration that induced the varied meaſure of the Society already alluded to. They ſeem to have taken up the matter with the earneſtneſs it deſerves; and under their countenance I will venture to predict the beſt conſequences. As the ſubject continues to be inveſtigated, the difficulties will neceſſarily ſubſide; and the profits being rendered more ſecure, the undertaking will become ſufficiently lucrative not to require any additional incitement.

The prevailing prejudice for foreign commodities, ſeems to me to be of infinitely more conſequence than any obſtacle that can impede its general cultivation; but

even

even this, ſtrong and powerful as it is, ſelf-intereſt will overcome; and if the cultivator is circumſpect, and as much as poſſible endeavours to give Britiſh Rhubarb the appearance of the foreign, and at the ſame time moderates his pecuniary expectations, there can be little danger of its riſing in the public eſtimation. I purpoſely omit noticing here its medicinal qualities, as, from the general teſtimony, they are not likely to be queſtioned; all accounts agreeing that Rhubarb, ſo cultivated as to arrive at ſix or ſeven years growth, and properly cured, will poſſeſs all the virtues the moſt ſanguine can deſire.*

In

* In corroboration of this ſtatement, and under the conviction how much gratification it will afford the Society, inaſmuch as it is a proof that in their endeavours to promote the public advantage they will receive co-operation from other reſpectable inſtitutions, I am induced to mention a circumſtance that has occurred within theſe few days.—At the inſtigation of Alexander Champion, Eſq. one of the Governors, I ſent ſeveral pounds of Britiſh Rhubarb to Guy's Hoſpital, for their examination and trial. I have ſince had the honour of an interview with the phyſicians of that hoſpital, upon the

In this place it will be proper to notice what I cannot help conſidering as very material: it is, that, without a perſevering attention throughout, the ſkill of the curer will be exerted to very little purpoſe; as I conceive all the difficulties to ariſe principally, if not entirely, from want of care and circumſpection in the cultivator. In other words, at a proper age it will have acquired a certain degree of woodineſs and ſolidity, that will be found greatly to facilitate this laſt operation: indeed, I begin to ſuſpect this to be the whole of the ſecret. Unfortunately, ſuch is the natural ſucculency of this plant, and its liableneſs to decay, as to require an unremitting aſſiduity to prevent the one, in

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ſubject, and embraced that opportunity for preſenting them other and improved ſpecimens. I cannot deſcribe the pleaſure I experience, while I add, that they were unanimous in their expreſſions of approbation and reſpect, and were pleaſed to give me an order for as much as, from the ſtate of my plantation, I was enabled to execute, as an encouragement for what they politely entitled my meritorious perſeverance and exertions.

in its progreſs towards the other. But as, in my former letters, I laid peculiar ſtreſs upon this point whenever it came under conſideration, and having noticed it hereafter, it becomes unneceſſary here to ſay more, than that perſons will find themſelves miſerably deceived, if, when the plantation is completed, they imagine nothing more to be done than to wait the harveſt. In the ſame letters, my method of culture being ſo minutely deſcribed (a method that poſſeſſes no other recommendation than ſimplicity), I ſhall paſs it over for the ſame reaſon; and, in the further proſecution of this ſubject, avoiding repetition as much as is conſiſtent with plainneſs, ſhall content myſelf with laying before the Society a few general hints, which, being the reſult of actual obſervation, may perhaps prove uſeful to future cultivators.

Firſt.—In the choice of a ſituation, I do not think the aſpect very material, provided it is not ſhaded too much on the ſouth or weſt; but it muſt be obvious, the ſmaller

number of ſurrounding trees the better, as the roots of the one may naturally be expected to interfere with thoſe of the other. The indiſpenſable points are the depth and good quality of the ſoil; and if, with theſe advantages, the plantation can be placed in a gentle declivity, ſuch a ſituation may be ſaid to be very eligible.

Secondly.—If the ground to be converted to this purpoſe is a greenſward, no time will be really loſt by a little delay. Suffer a ſeaſon or two to elapſe before the plantation is attempted, that the turf may be entirely decayed, the ſoil in general more ameliorated, and, what is of more conſequence than theſe, the wire-worms, which always infeſt old graſs land, more completely deſtroyed. Many thouſand plants I had the misfortune to loſe from the depredations of this inſect only; and it will be found, that even rats, mice, and moles, are not ſo much to be dreaded as theſe pernicious creatures.

Thirdly.—I would recommend every one, if they can, to ſow liberally (I do not mean a large

a large quantity of ſeed upon a ſmall piece of ground, but the contrary); and as it is impoſſible to foretell what devaſtation may happen, from an unuſually wet or ſevere winter, or any other cauſe, never let a ſeaſon be omitted, leſt a ſupply ſhould fail, and a ſucceſſion be loſt.

Provided the weather is open, the beſt period is the latter end of February, or the beginning of March, for this purpoſe; and if the ſeed ſhould not vegetate in three weeks, let the ſowings be repeated till they do. In cold ſoils a moderate hot-bed will be ſometimes required, but very ſeldom, and ought never to be uſed but when abſolutely neceſſary; for thoſe plants will be found the ſtrongeſt that are raiſed in the open ground. I prefer ſowing in the broad-caſt method, rather than in drills.

Fourthly.—The nurſery-bed to which the plants are to be transferred when at their proper ſize, and which comes next to be mentioned, muſt be diligently attended to. If any one ſhould ever conſult this Paper with

with the hope of information, let me aſſure the enquirer that more depends upon this circumſtance than at firſt may be imagined; for, ſtrange as it may ſeem, it is no leſs ſo than true, the future ſucceſs of a plant may be dated from its improvement in the nurſery-bed: hence the pains we beſtow upon them by conſtant waterings (for now they can ſcarcely have too much, if the weather is warm), and protecting them from the ravages of ſlugs and other inſects, in their preſent ſtage, will be amply repaid us. I have known roots that have thriven well now, arrive in three years to an equal ſize with others that have not ſucceeded ſo well at the end of five. On this account, taking it for granted that the preceding hint reſpecting the dimenſions of the ſeed-bed will be attended to, and as a great many will occupy but a ſmall ſpace, being no more than ſix or eight inches apart, I recommend every one likewiſe to plant as freely as they can; and, whenever a plantation is to be formed, or a vacancy filled up, to be ſure that the

fineſt and moſt thrifty plants are ſelected. I never recollect a ſingle inſtance of a plant ſucceeding, when it had loſt its principal bud.

Fifthly.—Where a plantation does not poſſeſs the natural advantage of being on a declivity, narrower beds, and deepened trenches, are among the artificial means that ſhould be adopted; but all ſituations will require a greater or leſs proportion of care, to prevent the ill effects of water remaining on the crowns of the plants; therefore, when the ſeed-ſtalks are cut off, which ought always to be done immediately upon the withering of the radical leaves, they ſhould be covered with mould, in the form of an hillock. This proceſs will anſwer two good purpoſes, that of throwing off the rains, and the trenches, by ſupplying the material, will always be kept well open.

Sixthly.—To obtain good merchantable Rhubarb, at every opportunity I have ſpared no pains to enforce the abſolute neceſſity of age, to diſcover the cauſe of its ſo frequent failure,

failure, in its progreſs towards it, and to point out the means of prevention. That the former is an eſſential will appear the more clearly, when I add, that till the plants have blown, their medical virtues ſcarcely come into exiſtence; and the latter will appear equally eſſential, when I further add, that at the ſame period the danger of decay commences likewiſe. Whoever attentively examines the growth of theſe roots, will perceive that their buds poſſeſs the double capacity, of ſerving firſt as their natural defence, and afterwards even aſſiſting in their deſtruction. When one or more of theſe buds have bloomed, a cavity is formed in the centre of the plant, ſurrounded by the reſt, into which the rain, if permitted, will make a lodgment, to the inevitable deſtruction of thoſe parts that, on this account, year after year, become unprotected.

Thoſe portions of the crown whence the ſeed-ſtalks ariſe, prove ever the moſt valuable; and every ſucceeding year pro-

ducing other ſeed-ſtalks, would add to the ſtock of uſeful root, if experience did not tell us, that hitherto the latter have increaſed no faſter than the former have been diminiſhed. Thus I have ſeen much ſurpriſe expreſſed in letters tranſmitted to the Society upon this ſubject, that upon taking up roots of ſeven or more years old the greateſt quantity ſhould be good for nothing; and as the cauſe has never been reflected on, the only remedy the authors have ventured to recommend, is a more early removal, not being aware that this meaſure is at once deſtructive of all the beneficial conſequences of age.

Laſtly—Notwithſtanding our utmoſt care, it muſt not be expected that ſucceſs will attend us in every inſtance; for this reaſon, every ſpring and autumn the plants ſhould undergo a general examination. The young ones will preſently diſcover their real ſituation, for either their leaves will wither as faſt as they are produced, or their growth will become ſtunted: but with regard to

the older ones, or thoſe that have blown, as in moſt caſes there will be found enough ſound root to produce a very luxuriant foliage, their ſtate can only be diſcovered by preſſing a finger into the centre of the crown; the leaſt unſoundneſs will ſoon be perceptible by this means.

In both theſe caſes I recommend the removal of the plants, and the vacancies occupied with others; for in the former much time will be ſaved, and the bad ſituation of the latter, by remaining, will only be aggravated, while it furniſhes the cultivator with an opportunity of examining into the occaſion of the ſeveral defects, and may lead to future prevention.

Thus, Sir, I have ſaid for the preſent, in a general way, every thing very material that the ſubject ſuggeſts: ſhould any one be deſirous of more particular information, I beg leave to refer him to the volumes of the Society's Tranſactions. A ſyſtem of culture is recommended in that of laſt year, I hope not the leſs effective for being ſimple;

and although its deſcription may be thought rather prolix by the general reader, yet perhaps not unneceſſarily ſo by the inquiſitive.

It therefore only remains for me to add a few words reſpecting my own plantation. The accompanying certificate, which I truſt is perfectly regular, will inform the Society, that in the year 1797 I have added 3040 to my former number, making an aggregate of nearly 5000 plants. The method I purſued was exactly that already referred to; and after this ſecond and more extenſive trial I confeſs myſelf unable to propoſe a better.

With this you will likewiſe receive a ſmall quantity of cured Rhubarb, being a part of the produce of my plantation, commenced under the auſpices of the Society in the year 1792; and I believe, conſidering its age, it equals any they may hitherto have ſeen. My only motive for this, is a deſire to offer ſome kind of proof in ſupport of my pretenſions to perſeverance. I hope I may be

permitted to ſend for it again, as it is all I have left, without a poſſibility of obtaining more till the next ſeaſon.

In concluſion, Sir, I can only repeat my former ſentiments, that the approbation of a Society, whoſe every object is for this public advantage, muſt reflect credit upon every individual who is fortunate enough to be ſo diſtinguiſhed. I have been ſo happy; and I take the opportunity to ſay, that this circumſtance I ſhall conſider, to the lateſt period of my life, as honourable in the greateſt degree; at the ſame time I flatter myſelf the Society will do me the juſtice to believe, that each repeated inſtance of their favour I eſteem as ſo many obligations to further and more important exertions. To yourſelf, Sir, I feel myſelf indebted for much politeneſs and attention on all occaſions: I hope you will accept my warmeſt acknowledgments, and the aſſurance that

I remain
Your much obliged
and very humble ſervant,
Mr. MORE. THOMAS JONES.

Fiſh-ſtreet-hill, February 13, 1798.

THIS is to certify, that Mr. Thomas Jones, of Fiſh-Street Hill, London, has raiſed and planted, in the year one thouſand ſeven hundred and ninety ſeven, at four feet aſunder, three thouſand and forty plants of Rheum Palmatum, or True Rhubarb, in a piece of ground which he rents of me on Fourtree-Hill, in the pariſh of Enfield, and that they are in a thriving condition.

WILLIAM SHAW.

Fourtree-Hill, Feb. 10, 1798.

SIR,

I WAS duly favoured with yours of the 13th inſtant, and beg you will be ſo good as to inform the Committee of Agriculture, that I ſigned Mr. Jones's Certificate relative to his claim for Rhubarb. The plants were in a very thriving ſtate laſt ſummer, and the very few plants that failed were made good by freſh ones laſt autumn; ſo that the plantation is complete, and perhaps the moſt healthy in England.

I believe

I believe no one in this country pays more attention to the culture of Rhubarb than Mr. Jones. He has now many thouſand ſeed-bed plants; and the moment any one of thoſe tranſplanted ſeem to decay, it is replaced by a freſh plant.

I am, SIR,

Your very humble ſervant,

WILLIAM SHAW.

Fourtree-Hill, March 16, 1798.

SAMUEL MORE, Eſq. Secretary.

The GOLD MEDAL, or the SILVER MEDAL and TWENTY GUINEAS, at the option of the Candidate, being the Premium offered for the IMPROVEMENT of WASTE LAND, was this Seſſion adjudged to JOHN PEART, Eſq. of Settle, in Craven, from whom the following Accounts and Certificates were received, and who made choice of the SILVER MEDAL and TWENTY GUINEAS.

SIR,

I HAVE ſent by this day's poſt Certificates of Improvement of fifty-ſix acres three roods twenty-three perches of Waſte Land, to James Lambert, Eſq. of Hatton Garden, which I have requeſted him to lay before the Committee on Tueſday next; and if the Committee think the improvements therein ſtated deſerving of a Premium, you will have the goodneſs to ſtate to me their reſolutions

reſolutions upon theſe Certificates, and deliver any Premium they may adjudge to Mr. Lambert on my account.

I have alſo taken the liberty to ſtate to the Committee the money I have lately laid out in the cultivation and improvement of land, which, though it may not come within the deſcription of Waſte, yet previous to its improvement was not of more than ſeven ſhillings an acre in annual value; and, in the courſe of two years, I am of opinion it will be better worth twenty ſhillings an acre, per annum, than it was worth ſeven ſhillings per annum before its improvement.—The improvement in the ground mentioned in the Certificates is in too cold a climate for corn; but I doubt not the grounds limed and drained, and alſo thoſe ploughed or pared, and ſown with graſs ſeeds, will, in the courſe of two years, fatten any ſort of cattle.

It has always appeared to me, that little attention has yet been paid to the improvement and cultivation of paſture ground in this

this kingdom, in compariſon to the plough-ing land; and I doubt not but the preſent paſture land in the kingdom may be made to keep at leaſt one third more ſtock of cattle, and alſo keep them much better than they are now kept. Paſture land within theſe laſt ſeven years is much increaſed in value, therefore it now becomes more profitable to a proprietor to improve that ſort of land.—Good and fine graſs will grow in almoſt the higheſt climates in this kingdom. I have now a part which, ſeven years ago, was covered with ling, and now grows very fine herbage, and will fatten any ſort of cattle; and I doubt not, the improvements ſtated will pay ſeven per cent. for which I have my own land as ſecurity.

The improvements ſtated in the Certificates have altogether coſt me 834l. 16s. 9d. and nearly the whole expended in the laſt two years, and chiefly in labour. You will have the goodneſs to ſtate this letter and the Certificates to the Committee; and I hope the improvements are upon ſuch a ſcale, and

and of ſuch conſequence to ſociety, that the Committee will adjudge me a Premium.

I am now going on with other improvements in the ſame way, and on an extenſive ſcale, having purchaſed a large quantity of land, at preſent very bad, which I hope to make good.

I ſhall be glad to be favoured from you with the determinations of the Committee upon my Certificates as ſoon as they have given them their conſideration.

I remain, SIR,

Your very humble ſervant,

JOHN PEART.

Settle, Dec. 7, 1797.

Mr. MORE.

A CERTIFICATE *of* IMPROVEMENT OF LANDS, *lying waſte upon two Parcels of Ground, called the* Braa *and* Middle Bar, *part of an Eſtate called* Beecroft-Hall, *ſituate near* Horton, *in the Pariſh of* Horton, *in* Ribbleſdale, *in the County of* York, *between the 1ſt of March*, 1796, *and the 22d of November*, 1797; *and an Account of the Expence attending ſuch Improvement.*

	£.	s.	d.
Paid Richard Hird for ploughing 18 acres 22 perches of ground on the Braa, at 20s. per acre, - - - -	8	2	0
Paid Jonathan Bracewell and partner for paring or puſh-ploughing 10 acres 3 roods 6 perches on the Middle Bar, at 16s. per acre,	8	12	6
Paid——Hey for paring or puſh-ploughing 4 acres on the Middle Bar, at 16s. per acre,	3	4	9
Paid ſeveral farmers in the neighbourhood for 1279 pecks of dreſſed hay-ſeeds (each peck containing two Wincheſter pecks), which have been ſowed on the above pared and ploughed ground: part coſt 1½d. and the remainder 2d. per peck, - -	9	4	5
Paid for building a lime-kiln on the Braa part,	10	0	0
Paid William Moor and partner for 3600 loads of lime (each load containing three Win-			
	£.49	3	5

	£.	s.	d.
Brought over,	49	3	5
cheſter buſhels) which have been laid on the above pared and ploughed ground,	97	10	0
Paid ditto for 1000 loads of lime which have been laid upon ten acres of ſward in the Braa, at 6½d. - - - -	26	1	8
Paid Richard Morfitt for loading the above 4600 loads of lime, at 1½d. - -	28	15	0
Paid Shepherd, Hudſons, and Co. for making 102 roods of ſtone wall, 2 yards high, each rood containing 7 yards in length, at 6s. per rood, - - -	30	12	0
	£.232	2	1

The ground above mentioned, previous to its improvement, produced only ling, and a ſtrong ſpungy moſs, except the ten acres of ſward, which produced a ſtrong tough white bent. The ſoil of the pared and ploughed ground conſiſts of about eight inches of black turf earth, and underneath a brown, mixed with gravel and clay. The ſoil of the limed ſward is about four inches of black earth, and underneath brown hazle mould. The pared and ploughed ground, in its original ſtate, appeared to be wet, but the proprietor finds it was only top water

water retained by the moſs; and now that the ſurface is broke, it will require no draining. The beſt method of managing this ſort of ground (of which there are many thouſands of acres in this kingdom) is to pare or plough it in the autumn, ſow it with the common graſs ſeeds of the country in June following, about forty pecks to an acre; then lay the lime in heaps from the kiln, each heap containing ſix pecks, and the heaps ſeven yards from each other; when the lime has laid about two months, ſpread it upon the ſeeds, which by that time will have taken root. All cattle ſhould be kept off the ground for two years, and the third year it will fatten cattle, particularly ſheep, moſt wonderfully, and will in that time become a ſolid firm ſward. The proprietor can ſpeak with great confidence of the ſucceſs of this mode of management and improvement of land, as he, about ſeven years ago, pared about twenty acres of ling ground, of the ſame quality as the Braa and Middle Bar, on a paſture at Graſſington, awarded to him under an act of parliament for diviſion of ſome

ſtinted

ſtinted paſtures there: it was ſown with graſs ſeeds, and then limed in the manner before mentioned. This ground, which was ſeven years ago covered with ling, and on which the proprietor has frequently ſhot grouſe, is now fine paſture land, and will fatten any ſort of cattle. The paring of the ground is done nearly in the ſame way as land pared for corn. The proprietor does not burn the parings; they are juſt turned over, and left to rot in that ſtate on the ground. By way of experiment on the land at Graſſington, he ſet fire to, and burnt part of the parings as they lay upon the ground; but he does not now find any difference between the ground where the parings were burnt, and that where they were left to rot upon the ground. The proprietor never ploughed any of this ſort of ground before; he ploughed the ground by way of experiment, to find out whether paring or ploughing anſwers better: he is inclined to think there will not be much difference. If the ground be inclined to wet, perhaps making furrows may keep it dryer, and in

that

that reſpect be preferable. The climate of the Braa and Middle Bar is too high for corn; it would grow there, and be a very productive crop, but it would not ripen. The graſs-ſeeds are now in a flouriſhing ſtate. The proprietor is well ſituated for getting lime at a ſmall expence, which in this mode of improvement is a great object, as lime is the greateſt expence. The coals for burning lime are not near the ground improved, and there is plenty of lime rock in almoſt every part of the eſtate.

I GEORGE HOLDEN, Miniſter of the church of Horton, in Ribbleſdale, do hereby certify, that I reſide near to the eſtate called Beecroft-Hall; that I know John Peart, the owner thereof, and believe the account of expences ſtated by him in his account is true; as witneſs my hand, this fourth day of December, 1797,

GEORGE HOLDEN.

Witneſs to the ſigning hereof by George Holden, WILLIAM MOOR.

A

A CERTIFICATE *of* IMPROVEMENT *of* LANDS *lying waſte upon a Parcel of Ground called* Scoutber, *ſituate within* Rathmel, *in the Pariſh of* Giggleſwick, *in the County of York, between the firſt of January,* 1796, *and the firſt of January,* 1797; *and an Account of Expences attending ſuch Improvement.*

	£.	s.	d.
Paid Francis Tomlinſon and John Robinſon for graving 13 acres 3 roods 35 perches, at 3l. per cuſtomary acre, on Scoultber -	25	0	0
Paid Edward Brown and James Tomlinſon for 950 loads of lime, each load containing three Wincheſter buſhels, laid on the above graven ground, at 1s. 4d. per load -	63	6	8
Paid John Towers for 60 roods of wall fence, on Scoultber, two yards high, each rood 7 yards in length, at 4s. 6d. per rood -	13	10	0
£.	101	16	8

The above-mentioned piece of ground, before it was graved, produced only ſtrong ling: the ſoil conſiſts chiefly of about twelve inches of turbary, and, under that, gravel or

ſtone. The ground was ſtony, and could not be ploughed or pared. The ſtones that were looſe were got out for fencing. The proprietor has ſown about one third part of the above parcel of ground with graſs-ſeeds; and, by way of experiment, he has it in contemplation to leave the reſt to ſwarth, without ſowing ſeeds on it, in order to diſcover the difference. The proprietor has not much expectation of this improvement anſwering great profit to himſelf, by reaſon of the lime being ſo very expenſive, and the ſoil being of bad quality, being much lighter than the ſoils mentioned in the annexed Certificate.

I, JOHN PEART, of Settle, in the county of York, Gentleman, do hereby certify to the Society inſtituted in London for the Encouragement of Arts, Manufactures, and Commerce, that the account of expences (amounting together to the ſum of 101l. 16s. 8d.) mentioned for the improvement of a parcel of ground, called Scoultber, in

in Rathmel, in the pariſh of Giggleſwick, in the county of York, of which I am the proprietor, is in every reſpect true and juſt. Given under my hand, this ſixth day of December, 1797,

JOHN PEART.

I, THE Reverend JOHN CLAPHAM, Vicar of Giggleſwick, do hereby certify, that I believe the above-mentioned Certificate, ſigned by John Peart, is true. Given under my hand, this ſixth day of December, 1797,

JOHN CLAPHAM.

CERTIFICATE *of the Expence of Improvements made on an Eſtate called* Beecroft-Hall, *ſituate at* Horton, *in* Ribbleſdale, *in the County of* York, *belonging to* John Peart, *of* Settle, *Gentleman; the whole of which Improvements have been done between the* 12*th of February*, 1796, *and the* 22*d of November*, 1797, *excluſive of the Works done on the Waſte Lands mentioned in the Certificate herewith ſent.*

	£.	s.	d.
Paid Richard Morſitt for making 29½ roods of fence, 7 yards to the rood, being ſtone wall, 2 yards high, in a field called Old Cloſe, belonging to Beecroft-Hall, -	8	17	0
Paid Thomas Clapham and partner for cutting, walling, and filling, 328 roods (7 yards to the rood) and 4 yards of draining in a paſture called the Mires, belonging to Beecroft-Hall, at 9d. per rood, and 1l. 1s. over	20	17	0
Paid Richard Morſitt for getting and leading ſtones for the above 328 roods, at 9d. per rood, - - - - -	19	16	0
Paid Richard Morſitt for making 71 roods of ſtone wall, 2 yards high, in the Mires, at 5s. 6d. per rood, - -	19	14	0
Paid Richard Clapham and Richard Morſitt for cutting, walling, filling, getting, and			
£.	69	4	0

	£.	s.	d.
Brought over -	69	4	0
leading ſtones, for 168 roods of drains in ſaid paſture, at 1s. 6d per rood, -	12	12	0
Paid Joſeph Redman and ditto for 112½ roods in ditto, at 1s. 6d. - -	8	8	4
Paid John Morfitt and ditto for 121 roods of drains finiſhing, at 1s. 6d. per rood, -	9	1	6
Paid John Heſleton and partner for 3342 loads of lime, each load containing three Wincheſter buſhels, laid upon the Mires, at 6½d. per load, - - - -	90	11	0
Paid John Morfitt for cutting, filling, and walling, 197 roods of drains on the Mires, at 9d. per rood, and 1l. 1s. over - -	8	8	9
Paid Shepherd for cutting, walling, and filling, 363 roods of drains, in a meadow belonging to Beecroft-Hall eſtate, called the Eight Acres, at 9d. per rood, and 1l. 1s. over, - - - - - -	15	2	6
Paid Thomas and Richard Clapham for cutting, walling, and filling, 720 roods of draining in the Mires, at 9d. per rood, and 2l. 2s. over, - - - - -	29	2	0
Paid Edmund Morfitt for getting and leading ſtones for the above 197 roods, by J. Morfitt, at 9d. per rood, - -	7	7	9
Ditto, ditto, for ditto, for the above 720 roods, by Thomas and Richard Clapham, at 9d. per rood, - - - -	27	0	0
Carried over	£. 276	17	10

	£.	s.	d.
Brought over,	276	17	10
Paid Edmund Morfitt for the above 363 roods, by Shepherd, being farther to lead, -	18	3	0
Paid Richard Morfitt for making 20 roods of ſtone wall, in the Mires, 2 yards high, at 5s. 6d. per rood, - - -	5	10	0
Ditto Hudſon, Clapham, and Co. for making 65 roods of ſtone wall, 2 yards high, between the Mires and Eight Acres, at 7s. 2d. per rood, - - -	23	5	10
£.	323	16	8

The above ſum of 323l. 16s. 8d. has been expended by Mr. John Peart, the proprietor, in the improvement of about forty acres of ground. Before it was drained it produced chiefly ruſhes, and was of very ſmall annual value, and conſtantly wet and marſhy. The ſoil conſiſts of about twelve inches of black earth, inclined to turbary, and underneath that a ſtiff marly clay. The drains were hired to be cut a yard deep, and to be twenty inches wide at the bottom: they are walled on each ſide about eight inches high, and then covered with a ſtone.

Where

Where ſtones are to be had at a moderate expence, the proprietor thinks ſtone drains much preferable to thoſe covered with ſods; and though the expence (even where ſtones are near) is nearly four times the expence to the proprietor, yet he thinks it more profitable than ſod drains, particularly in paſture ground. In that part of the above-mentioned ground which was firſt drained, the ruſhes were this year much weaker, and the proprietor doubts not but in a few years they will entirely diſappear; and he believes that this ground will, after next year, be cheaper to a farmer at twenty ſhillings an acre per annum, that it was at ſeven ſhillings before the improvements:

I, JOHN PEART, of Settle, in the county of York, Gentleman, do hereby certify and declare to the Society inſtituted at London for the Encouragement of Arts, Manufactures, and Commerce, that the certificate expences for the improvement of two parcels of ground, called the Mires, and Eight Acres, parcel of an eſtate called

Beecroft-Hall, of which I am proprietor, is true; and that the ſum of three hundred and twenty-three pounds ſixteen ſhillings and eight pence, mentioned in ſuch certificate, as the total amount of expences paid by me for the improvements in the ſaid eſtate, hath been actually and *bonâ fide* expended and paid by me for ſuch improvements. Given under my hand, this 30th day of November, 1797, JOHN PEART.

Witneſs to the ſigning hereof by John Peart, LEONARD WILKINSON.

I GEORGE HOLDEN, Miniſter of the church of Horton, in Ribbleſdale, do hereby certify, that I reſide near to the eſtate called Beecroft-Hall; that I know John Peart, the owner thereof; and believe the account of expences mentioned, and alſo the Certificate ſigned by John Peart, is true. Witneſs my hand, this 4th day of December, 1797, GEORGE HOLDEN.

Witneſs to the ſigning hereof by George Holden, WILLIAM MOOR.

CERTIFICATE *of the Expence of Improvements made by* JOHN PEART, *of* Settle, *Gentleman, on an Eſtate in* Rathmel, *in the Pariſh of* Giggleſwick, *his Property, between the firſt of November,* 1794, *and the firſt of November,* 1797.

	£.	s.	d.
Paid John Monk, for cutting, walling, filling, getting ſtones for, and finiſhing, ſeventy-one roods of drains, in a parcel of ground, called Wogdens - - - - -	5	5	0
Paid Houghton and Cook for ditto (four hundred and ſixty-nine roods of drains), at 1s. 7d. per rood, in ditto - - - -	37	2	6
Ditto John Towers, for making 107 roods of fence in ditto, at 5s. per rood -	26	15	0
Ditto Edmund Brown, for 1000 loads of lime laid in ditto, at 8d. per load - -	33	6	8
Ditto Thomas Demayne, for leading ditto, at 6d. per load - - - - - -	25	0	0
Ditto H. Ingham, for making 35 roods of ſtone wall, 2 yards high, at 7s. per rood, in a field called Croſs-Lands, in Rathmel	12	5	0
Ditto E. Brown, for 500 loads of lime laid on ditto, at 8d. per load - -	16	13	4
Ditto Thomas Demayne and Downham, for leading ditto, at 1s 4d. per load -	8	6	8
Carried over -	£.164	14	2

Paid

Brought over -	£.164	14	2
Paid Thomas Dodds for levelling this field, about ſeven acres - - -	6	0	0
Ditto for 400 pecks of hay-ſeeds ſown on ditto	3	11	8
Ditto for white clover-ſeed ſown on ditto -	2	15	6
	£.177	1	4

The parcel of ground called Wogdens is the ſame ſort of land as the Mires, mentioned in the annexed certificate.

I, JOHN PEART, of Settle, in the county of York, Gentleman, do hereby certify to the Society inſtituted in London for the Encouragement of Arts, Manufactures, and Commerce, that the account of expences (amounting together to the ſum of 177l. 1s. 4d.) for the improvement of lands in Rathmel, in the pariſh of Giggleſwick, in the county of York, of which I am proprietor, is in every reſpect true and juſt. Given under my hand, this 6th day of December, 1797,

JOHN PEART.

I THE Reverend JOHN CLAPHAM, Vicar of Giggleſwick, do hereby certify, that I believe the above-mentioned Certificate, ſigned by John Peart, is true. Given under my hand, this ſixth day of December, 1797,

JOHN CLAPHAM.

SIR,

MR. Holden has ſent to me the letter you addreſſed to him, in which you expreſs a wiſh, on the behalf of the Committee, to be informed of the real quantity of land improved.—The quantity of land improved, lying waſte, is as follows:

A.	R.	P.	
18	0	22	On a paſture called the Braa, ploughed, limed, and ſown with graſs-ſeeds.
10	0	0	On ditto, limed, being a very ſtrong tough white bent, mixed with ling.
			N. B. Theſe two parcels of ground J. Peart has incloſed, from a very large tract of ground, into one paſture.
28	0	22	Carried over

Pared

A.	R.	P.	
28	0	22	Brought forward.
14	3	6	Pared, limed, and ſown with graſs-ſeeds, on a paſture called Middle Bar.
			N. B. The above three mentioned quantities are parcel of Beecroft-Hall eſtate.
13	3	35	Graved, limed, and part ſown with graſs-ſeeds, on a parcel of ground called Scoultber, ſituate within Rathmel, in the pariſh of Giggleſwick.
56	3	23	

The total quantity of ground lying waſte, improved by J. Peart, is fifty-ſix acres three roods and twenty-three perches, ſtatute meaſure.

As you mentioned to me in a former letter, that the Committee had withdrawn their premium for draining lands, I did not think it neceſſary to ſtate, in my certificate, the quantity of land which I had drained, limed, and fenced, as I did not ſuppoſe that ſort of improvement came within any of the claſſes for which the Society offer premiums. I have for their ſatisfaction ſtated the quantity below.

	A.	R.	P.
The Mires and Wild Bar, which is all limed, drained and fenced, contain together	42	2	0
Land drained in the ſix-acre meadow,	4	3	0
The above is alſo parcel of Beecroft-Hall eſtate.—The Mires and Wild Oar, previous to J. Peart's purchaſe, were valued by the late Mr. Lang, of Leyland, part at 5s. and the remainder at 6s. per acre. Their produce before the improvement was chiefly ruſhes.			
Wogdens, ſituate within Rathmel, which has been limed, drained, and fenced, contains	17	2	0
N. B. This parcel of ground was purchaſed by J. Peart, in public auction, about 3 years ago, at £.100, and he has now let it for £.15 per annum, for 7 years, to be kept in graſs land.			
Croſs-lands in Rathmel, limed, fenced, and ſown with graſs ſeeds, - -	7	3	20
N. B. J. Peart purchaſed this field in auction, when he bought Wogdens, at 50 guineas per cuſtomary acre; and ſince he ſent his former certificates, J. Peart has ſold it at 75 guineas per cuſtomary acre, which has left him a profit, beſides paying all intereſt and expences, of about £.50.			
Statute meaſure	71	2	20

Should the Committee wiſh any further information which is in my power, I ſhall be happy to communicate it.

I remain,

SIR,

Your moſt humble ſervant,

JOHN PEART.

Settle, Jan. 27, 1798.

Mr. MORE.

SIR,

I WAS favoured with yours of the 16th inſtant; in anſwer to which I muſt ſay, that I *did ſign* the Certificate of Mr. Peart. I know he has made great improvements, and at a great expence; but I own I am a ſtranger to the number of acres contained in the land improved. I ſhall ſhew Mr. Peart your letter, and doubt not

he will be able to give you a ſatisfactory anſwer.

I am, SIR,

Your very humble ſervant,

GEORGE HOLDEN,
Miniſter of Horton Church.

Mr. MORE.

Horton, in Ribbleſdale,
Jan. 25, 1798.

SIR,

I RECEIVED your favour in due time, and have taken great pains to get an exact account of the quantity of acres improved by Mr. Peart. After I had obtained the beſt information, I deſired him to give me his account, in ſtatute meaſure, which agrees nearly with my information.

I believe Mr. Peart is a man of honour, and I could depend on his word; but I have not been guided ſolely by that. His own account accords ſo nearly with other perſons, whoſe

whoſe opinion I have aſked, that I thought I might ſafely and with propriety copy it.

The quantity of ground, in Statute Meaſure, upon an Eſtate called Beecroft-Hall, in the pariſh of Horton, in Ribbleſdale, in the County of York, improved by Mr. Peart, the owner.

	A.	R.	P.
In a paſture called the Braa, ploughed, limed, and ſown with graſs-ſeeds, the produce chiefly a ſhort ling before it was ploughed,	18	0	22
On the ſame paſture, limed, which was chiefly a ſtrong tough white bent,	10	0	0
In a paſture called Middle Bar, puſh-ploughed, limed, and ſown with graſs-ſeeds,	14	3	6
Two parcels of ground, called Mires and Wild Bar, fenced, drained, and limed, &c.	42	2	0
Total quantity in Horton Pariſh,	85	1	28

In a paſture called Scoutber, in Rathmel, in the pariſh of Giggleſwick, in the ſaid county of York, graved, limed, and part ſown with graſs-ſeeds,	13	3	33

In

	A.	R.	P.
Brought forward	13	3	33
In a paſture called Wogdens, in Rathmel; limed and drained, - -	17	2	0
In a paſture called Cinder Hill, in Rathmel, limed and drained - -	4	3	0
In a field called Croſs Lands, in Rathmel, limed and ſown with graſs-ſeeds,	7	3	20
Total quantity in Rathmel, in the pariſh of Giggleſwick, - - -	44	0	15

The above account I hope will be found a ſatisfactory one; and am,

SIR,

Your humble ſervant,

GEORGE HOLDEN.

Horton, in Ribbleſdale,
Feb. 20, 1798.

Mr. MORE.

SIR,

I BEG you will have the goodneſs to ſtate to the Society for the Encouragement of Arts, Manufactures, and Commerce, that I feel myſelf very highly honoured by them,

in their having adjudged to me their premium for improving land lying waſte; and, agreeably to the choice given by them to me, I will accept of the Silver Medal and Twenty Guineas, in preference to their Gold Medal. When the premiums are diſtributed, I could wiſh the Society would order what they have adjudged to me to be delivered to my bankers, Baron Dimſdale and Co. or to James Lambert, Eſq. Hatton Garden.

The ground at Rathmel, which I have improved, I intend keeping in my own occupation; and I ſhall, from time to time, have much pleaſure in communicating to the Society, with accuracy, the effects of my improvements; and I will alſo communicate the information my tenant at Beecroft-Hall may from time to time give me. I have had much pleaſure in looking over theſe improvements, and I doubt not but they will produce ſufficient profit. I am now employing ten men and ſeveral horſes, daily, in the improvement of graſs land.

The

The land at Graſſington, which I pared, limed, and ſowed with graſs-ſeeds, and which before that improvement produced a ſtrong ling, is not in my own occupation, but is let to a farmer.

I ſent your queſtions to him, which he anſwers as follows:

To the firſt—He ſays, the ground above mentioned will keep and fatten, between Lady-Day and Michaelmas, two ſheep on each ſtatute acre.

To the ſecond—He ſays, this ground will winter ſheep.

To the third—He ſays, he annually fattens Scotch ſheep on this ground.

To the fourth—He ſays, it annually fattens Scotch cows or Scotch bullocks.

To the fifth—The land is ſtocked with Scotch cows, or Scotch bullocks and Scotch ſheep: to every cow or bullock three ſheep.

Theſe are the anſwers of my tenant, to whom I ſent the queſtions you deſire to be anſwered. I let the paſture at Graſſington

for £.44 per annum, before the effects of the improvements could be known; at that price it paid me, for my improvements and the original purchaſe-money, a very high intereſt: my tenant ſays it is now a very cheap farm, though it was conſidered a high price by the neighbourhood when he took it.

The cattle fattened in this diſtrict of country (Craven) is principally Scotch ſheep and Scotch beaſts: when fat, they are ſold chiefly to Mancheſter, and the large manufacturing towns in Lancaſhire. The meat of ſuch cattle has a decided preference in thoſe markets. There is a breed of fine long-horned cattle in Craven; and the oxen cows (except ſuch of the latter as are wanted to keep up the ſtock of the country) are chiefly ſold into Leiceſterſhire and the ſouthern counties.

In the ſtocking of grazing land it is eſteemed good management for the farmer to allow his paſtures in the ſummer ſeaſon to be very full of graſs: by this the ground is improved, and the ſtock which he fattens

in

in ſummer can be kept without hay in the winter, and be in good condition.

I ſhall at all times be glad to give to the Society every information in my power, reſpecting the improvement of graſs land, in which much improvement is wanted, and in which I think very much may be done.

I remain, SIR,

Your obliged humble ſervant,

JOHN PEART,

Settle, March 26, 1798.

Mr. MORE.